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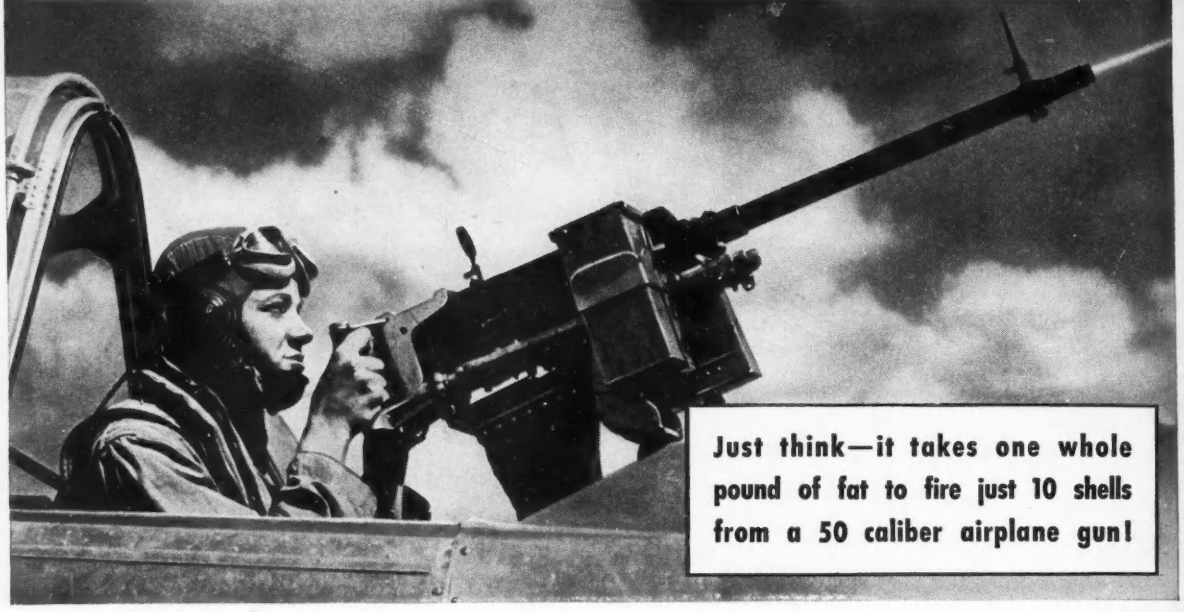

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PERSONNEL MANAGEMENT IN HOSPITALS

CHARLES F. WILINSKY, M.D.

Executive Director, Beth Israel Hospital, and Deputy Health Commissioner, City of Boston

AN ACCURATE depiction of man's onward march through the ages will present conclusive evidence of the all-important part played by hospitals in the promotion of health and the conquest of disease. At the bedside of the sick, in the primitive hospital wards of the past, and in the modern hospitals of today, in the laboratories and in the operating rooms, hospital personnel have played unsung yet invaluable roles in the restoration of life and limb, and in the early return of the sick to their jobs and their loved ones. It has, indeed, been well said that hospital progress has kept abreast of "the triumph of civilization over barbarism," and in this progress the hospitals of the world have played their modest yet most significant roles.

It was not so long ago, as we measure the span of time, that hospitals were places to which we sent our sick poor. As a general rule, people were sent or went to hospitals to die; today they go to get well. It is authoritatively stated that as recently as 75 years ago there were less than 200 hospitals in the United States with a total of approximately 30,000 beds. Today, the more than 6300 hospitals in the United States have over 1,300,000 beds, and more than 13,000,000 patients were cared for in these institutions in 1942. The constantly increasing popularity of the hospital is reflected in the bed shortage which we find so prevalent today. This is due to the newer concept of which everyone, by and large, is conscious; namely, that the hospital is the logical place in which to cope with the problems of serious illness.

The care of the patient involves the utilization of the services of doctor, nurse, technician, dietitian, social worker, personnel of the x-ray department and of other laboratories, the record librarian, the operating room personnel, and others involved in the actual professional care of the patient. The efforts of this group, who may be defined as those more immediately related to the essential professional care rendered to the patient, must, nevertheless, be integrated with others employed in order to make it possible for the sick person to have everything essential for his physical and mental comfort. Food, maintenance, laundry, and housekeeping are but some of the other services materially affecting the welfare of the patient.

It has, indeed, been soundly stressed that hospital organization and management must concern itself with the "well ordered direction of one of the largest welfare activities on this continent." In order that the patient may secure adequate care, qualified leadership and sound organization is essential, involving the integration of services, coordination of effort, and the maintenance of essential functions and satisfactory morale. We speak of hospitals as "the workshops of the medical profession and the battlefield between life and death." It is truly claimed that care in the hospital possesses advantages redounding to the welfare of the patient and making possible the more satisfactory solutions of the problems of illness. This is due to the availability of group judgment, professional and technical personnel, essential equipment, laboratory services and other features and factors which have changed the public's concept of the hospital, shortened the average duration of the hospital stay, and reduced mortality rates.

Quietly and unobtrusively, without the stimulation of the cry of battle, the gleam of the sword, or the flash of the bayonet, unsung heroes working over the microscope and test tube or in the operating room or x-ray department or at the bedside of the sick have unselfishly devoted themselves to the all-important task of coping with man's most constant enemy—disease. Supplementing these essential efforts, members of other services have labored through the years in what may be termed the less glamorous departments of our hospitals. In the dietary department, in housekeeping, in the maintenance shop, in the bookkeeping department and at the switchboard, in the laundry—yes, all over the hospital, they have performed the services required to meet the varied needs of the patient.

Hospital employment in the past has not been appealing. Low wages, unsatisfactory working hours, inadequate maintenance, lack of opportunities for advancement—these are but some of the disadvantageous factors which have tended to cause too frequent turn-over of personnel and have served to attract, in most instances, the type of employee who was satisfied to be housed and fed by the institution, and to be paid what we could not claim to be a satisfactory wage.

Visionary hospital administrators for some time have been aware of the need for a change in this situation and for the application of certain sound personnel principles, commonly found in vigilant industrial life. The shortage of personnel, because of the dislocation of industrial life which the war has produced, has compelled hospitals to scrape what may truly be termed the bottom of the barrel and to take, in many instances, people who would normally be regarded as unemployables. These have included the very young, the very old, the physically handicapped, etc. They have been given jobs for which they were ill-trained. They have been consistently unhappy on the job because of manifest evidence on their part of inability to perform satisfactory service, or they have been shiftless and immediately following the receipt of their pay have given up their jobs. Hospital administrators, therefore, have been obliged to face the present serious situation realistically and to make every possible effort to retain the remainder of their organization, by the adoption of higher wage scales and other employment benefits in order to fill their depleted employee ranks.

It was inevitable that the present war would have its effect upon the industrial life of the nation, that it would create a shortage of manpower, and it has had a particularly serious effect upon the hospitals of this country. The reason for this is obvious. The voluntary hospitals of America, concerned with the furnishing of free care to a large proportion of the American population, have been dependent upon private philanthropy for the funds with which to make this care possible. The resulting financial resources have been insufficient to make it possible in turn for hospitals to compete with industry in the payment of adequate salaries and wages. Industry, its labor ranks depleted, and able to pay higher wages, has been able to influence many of our personnel to leave for what appear to be better jobs, higher pay, and easier work. As already pointed out, those responsible for the management of our hospitals have therefore found themselves faced with no alternative in their desire to keep their institutions open, but to compete so far as possible with industry, not only by means of higher wages, but also by the adoption of a change in viewpoint in relation to the subject of personnel management and personnel practices.

PERSONNEL PRACTICES

In the application of modern personnel management principles, one may profit from the knowledge of the

[1]Presented before the American Dietetic Association, Pittsburgh, October 20, 1943.

progress which has been made in the labor movement, and in conditions affecting labor and industry. The organization of the laboring groups, national and state labor legislation, regulations governing employment with particular emphasis on those applying to women and children, minimum wage laws, rules and regulations for the protection of the health of the worker, unemployment and old age insurance, etc. are but some of the yardsticks indicative of progress in the field of industrial welfare.

More important, however, than the progress which has been made because of established rules and regulations, has been the recognition by industry of the important relationship between adequate production and the ability of the employee to perform a specific job. Employers have learned that there are important values reflected in the happiness and contentment of the employee group.

Important employment techniques have been developed by industry and applied to the careful selection of personnel. These include a clear understanding on the part of the potential employee of the job to be performed, and the accompanying duties and responsibilities, as well as an analysis by the employer of the ability of the prospective employee to do the work which may be required of him. It has become increasingly apparent that people, as a rule, will make progress on jobs for which they are qualified and which they enjoy doing. Industry has learned to talk about job analysis, job specifications, and job description. These mean just what they imply and are intended to avoid the attempt to put square pegs into round holes.

If it be true that potential employees should be carefully selected on the basis of their ability to perform a specific function, if there be logic in the premise that the employee must have an understanding of the job to be performed, then the practice of satisfactory personnel relations must begin at the point when the applicant is interviewed. Hospitals, particularly, have put people to work, in the past, with very little study as to their ability to carry out the duties of the jobs for which they had been selected, or without the necessary investigation of the background and record of the individual. Industry has found it profitable to employ trained personnel directors who interview applicants for positions. While the scarcity of available personnel at the moment frequently permits little choice, it is more important than ever that the depleted ranks of hospital personnel be filled, if at all possible, by those with the ability to carry on specific performances.

HOSPITAL EMPLOYMENT

Allusion has already been made to the fact that because of the war hospital personnel have suddenly found many opportunities for employment at higher wages. In one discussion of the seriousness of this problem representatives of a hospital employee group asked: "Why should not employment by a hospital be considered similar to employment in any other type of industry? In the past, hospital administrators have frequently raised the point that employees of hospitals cannot be considered as falling within the same category as those employed in industry, because the hospital is a nonprofit institution dependent upon community support. Employees of hospitals challenge this point of view and stress the fact that the approach to this question should be on the basis of a common understanding that hospital employees should be paid a decent wage compatible with that for similar work performed in private industrial pursuit." The employee's point of view is that there is no sound reason why we should differentiate between employees of hospitals and employees in industries when the work is of a similar nature. They reason that it is only natural to accept the higher wages which industry offers. Representatives of hospital personnel feel, too, that it is important to educate the community toward a sense of responsibility for the financial support of hospitals if the scale of wages for hospital personnel is to be comparable to that paid for similar service in other fields.

The prospective hospital employee is concerned with what wages he is to be paid, the hours he is to work, the conditions to govern his employment, and whether he receives a vacation with pay. Is there any provision for sick leave, and if so under what conditions? He poses questions as to the maintenance facilities, as well as those for rest and recreation, the incentives for continuance of employment, the opportunities for an increase in wages and for promotion as a reward for service well rendered, and asks what are the provisions for medical care and hospitalization.

HOSPITAL PERSONNEL PRACTICES

We must face the fact that the basis for satisfactory employment must be a living wage in keeping, when at all possible, with the market for similar occupations. A wage policy should be established which will recognize length of employment and satisfactory service rendered. There is nothing which gives the employee so much satisfaction as an unexpected reward in the way of a justifiable salary increase. In an attempt to retain employees in the present crisis hospitals should be as generous as possible in rewarding loyalty and devotion which in turn will be reflected in a willingness to remain in the employ of the institution even though opportunity for higher wages is available in industry.

Hospital administrators should take note of the advantages of including in the employee's wages the cash value of maintenance to which the latter is entitled, leaving the employee free to live or eat wherever he or she may desire. It is agreed that this practice attracts a more satisfactory type of employee who will frequently prefer to live with his family rather than in hospital dormitories. It furnishes another important benefit in presenting a truer picture of his total compensation to the employee, who is frequently surprised to find that he is receiving wages which compare favorably with those paid by industry. If the hospital is to furnish maintenance, it is exceedingly important that the food and living conditions be satisfactory.

A liberal vacation and a sick leave policy, both with pay, are important factors in maintaining the health and satisfactory morale of the employees of the institution and as a rule will yield dividends in the form of employee good will. Adequate facilities for health protection and for the hospitalization of employees should be provided by the hospital. Reasonable hours of employment are another important factor in the maintenance of adequate personnel relations and in the reduction of turn-over. We are familiar with the prevailing custom of expecting employees to work broken hours. Today's scarcity of available personnel precludes in a marked degree the possibility of a change in most instances to the straight working day. Every effort, however, should be made to correct this situation whenever and wherever possible. It is important to remember that split hours are never for the benefit of the employee, but always for the employer. There are, however, hidden disadvantages which affect materially the quality of the work done and the consequent welfare of the institution.

Satisfactory recreational facilities should be made available whenever possible, particularly for those who are obliged to live in the hospital, and until the situation is corrected, for those who are obliged to stay at the institution when working broken hours. Stress should be placed upon the importance of proper working conditions, includ-

ing satisfactory ventilation, adequate lighting, sufficient equipment, needed replacements, labor-saving devices—all important factors in maintaining satisfactory morale as well as promoting hospital efficiency.

Every opportunity should be furnished for the promotion of qualified people from within the ranks. The training of successors to key positions held by others is a stimulating factor to continuity of employment. It encourages a feeling of loyalty and results in devotion to the institution. For example, a secretarial position may be available in a department for which a junior secretary in another department has the necessary qualifications; or the assistant office manager may "inherit" the position of a predecessor who has been made manager. This system tends to lift the morale of all the employees in the institution.

Some hospitals, although too rarely, have found it possible to make provisions for old age insurance, group protection, and the development of loan funds. It should be self-evident that employees will have the desire to continue their affiliation with an institution which manifests an interest in the welfare of its workers.

Nothing gives employees so much satisfaction or makes them more grateful than the feeling that there is an open door to the office of the department head, and, in turn, to the administrator of the institution. It is of invaluable aid in the maintenance of satisfactory morale among the employees to let them know that some plan exists for approach to the office of the administrator of the institution, with the privilege of expressing a point of view and for the discussion of some phase of their employment. By this I do not necessarily mean the stimulation of the organization of labor unions within the institution, but rather the creation of what we consider in my hospital a small personnel committee representing the employees. They may desire an appointment to discuss in a friendly spirit the relationship of the increased cost of living to their present compensation. They may come in to discuss the question of the possible increase in the time allowance for sick leave or the vacation period. It may be the question of an enlargement of recreational facilities, or of improvement in other conditions. The creation of such a group encourages the personnel to tell their side of the story, and with equal facility the administration may point out problems of the hospital, its financial limitations, its willingness to do all that is possible. Such a voluntary group representing the personnel, stimulated and approved by the trustees and administrator of the hospital, will do much to maintain self-respect and morale, will encourage a satisfactory relationship between the employees and the administration, and will produce a satisfactory esprit de corps in the hospital.

The members of the American Dietetic Association, in their zeal for the efficient operation of their units of service in hospitals, are particularly and properly concerned with maintaining the type of personnel practice which will yield satisfactory results. The dietary department expenditures are approximately 25 cents of the hospital dollar. This department is expected to meet any dietary needs of the patients, be it the regular or the therapeutic diet, and to satisfy the appetite, demands, and whims of both patient and personnel. It must serve as an educational unit in teaching the student nurse and student dietitian. The dietary department is faced with long hours and constant demands every day of the week, every week in the year. Its essential and varying personnel in some instances includes stewards, and in all instances dietitians, chefs, cooks, dish and pot-washers, bus-boys, porters and waitresses. Their efforts must be correlated and integrated into the planning of the menu, the purchase and preparation of food, its service from the range to food cart and truck, then to the floor and ward, as well as to the dining rooms of the hospital personnel. The food must be properly prepared and served so that it reaches the patient in an appealing form. In these days of scarcity of personnel this is a most difficult, if not impossible task, since no department in the average hospital has felt the impact of employee shortage or has had a greater turn-over than the dietary unit. There can be no question that the satisfactorily functioning dietary department represents a tremendous asset to the hospital, and the understanding hospital administrator is mindful of the task which confronts the administrative dietitian.

Really progressive improvement in the dietary department must be predicated on an appreciation of the importance of this unit of hospital service and on the willingness to pay wages and maintain working conditions comparable to those found in good hotels and restaurants. We seek many of our personnel from the same source as do hotels and restaurants, and we must therefore adjust our wages to the same level if we expect to fill our vacant positions, even in normal times, with competent people. We spend considerable sums for raw food, the preparation and serving of which are frequently affected by the wages we pay since this, in turn, has a bearing on the ability of the employee. When conditions permit, every effort should be made to develop straight shifts and to assign reasonable working hours consistent with local practices in hotels, restaurants, etc.

CONCLUSIONS

We must be realistic and admit that our hospital employee vacancies will not be filled because of the hope on our part that altruism and ideology will serve to influence workers, except on very rare occasions, to seek jobs in hospitals at lesser pay and under more unfavorable working conditions than in other fields of endeavor. We must be aware that it is impossible for the voluntary charitable hospital to compete at the present time with war industries and with other industrial groups in the matter of wages. At the same time, we must realize that it is going to be necessary for hospitals to establish and maintain a wage scale sufficient to assure their personnel a satisfactory standard of living.

The present great struggle for the survival of a decent world is a fight between forces led by ruthless men, motivated by a lust for power and false ideologies, and those who aspire to freedom and that which truly makes life worth living. Efficient industrialists have stressed the fact that we should raise the pay of employees, not so much to make them work harder, but to make them work better. Indeed, it has been well said that satisfactory morale will drive men to move mountains and change the course of rivers. Surely, freedom from want, and consequent freedom from worry, is the right of those who seek employment with us. It is also important to remember that it will redound to the advantage of the employer. Above all, the creation of an atmosphere of friendly personal interest in the employee on the part of his superiors will not only do much to solve personnel problems, but will make possible, in a marked degree, the realization of the ultimate goal of all faithful hospital workers; namely, the better care of the patient.

INDIANA UNIVERSITY MEETS THE NEEDS OF THE ARMY AND NAVY FEEDING PROGRAMS[1]

M. FAITH McAULEY

Consultant in Food Administration, Chicago

IN JUNE 1942 Indiana University accepted a contract with the United States Navy to house and feed 1200 trainees. These students began coming in June and by October 1 the full quota had arrived. In June 1943 the University also accepted a training contract with the Army and on the Bloomington campus at present there are approximately 2400 trainees in the A.S.T.P. medical and dental units. There is also a group of selected students over 17 and under 18 years of age who are not in uniform.

ADAPTING FACILITIES TO NEEDS OF THE NAVY

The men's residence halls, consisting of 3 dormitories with central dining room and a kitchen designed to accommodate 385 students, were made available. The housing problem was solved relatively easily through the use of bunk beds. The feeding problem was more difficult. Here the increase in number to be served necessitated changes, especially in the kitchen where an increase in floor space was imperative to accommodate more employees, more food, and additional equipment. An expenditure of $16,000 was approved by the Navy to meet the cost involved in making the necessary changes and in purchasing new equipment.

An effort was made throughout to buy the least possible additional equipment and to adapt present building facilities to the new needs through simple modifications. No new buildings were constructed. Alterations made to meet the new requirements as far as possible were such as would facilitate an eventual return to the original setup.

The bakery unit was moved into a trunk room in the basement directly beneath the kitchen, and 2 new double-decked electric ovens, a mixing machine, and a refrigerator were installed. The original ovens were left in the kitchen for the use of the meat unit, and with 3 new 80-gal. steam-kettles furnished the added equipment needed for the increased load in the kitchen.

The vegetable preparation unit, with all equipment, and the dishwashing unit were also moved to the basement, and a hand-powered service elevator was enlarged and electrified for the transport of bakery products, vegetables and dishes.

In the dining room the tables were arranged in rows close together, and benches replaced the chairs. A standard Navy steam-table with 6 openings, two 50-gal. coffee urns, and electric toasters were installed. The pitcher fountains were converted to bubblers. This lay-out for cafeteria service, except for beverages which were poured and placed on the table, and the use of the compartment tray permitted an average of 20 students to be served per minute at breakfast and from 15 to 17 per minute, depending on the menu, at the other meals. By reseating and an extended service period, the dining room was made adequate for the increase in numbers. An officers dining room, where waitress service is provided, was also arranged.

An increase in staff from 16 to 57 was also necessary. This number includes the supervisory dietitian, a production manager, and an assistant.

Six successive commanding officers within a year, with resulting changes in policy, made some difficulty. For instance, at first it was the policy to admit women, and for several months half the trainees were men and the rest women. One dormitory was given over to the women and one to the men who also occupied two-thirds of the third dormitory. Later, the school was made a training station for women only. It may be of interest to note that the officers and the local staff felt that the arrangement admitting both men and women was preferable to that which limited attendance solely to men or to women.

THE NAVY COOKS AND BAKERS SCHOOL

Another feature which should be mentioned is the Cooks and Bakers School operated for the Navy to which groups of 12 were assigned for a 4-month training period in October 1942. Classroom work of 6 hours weekly was designed to enable the trainee to pass the Navy examination necessary to be "rated." Elementary nutrition and the basic principles of food preparation were covered. Practical work was given in the kitchen, bakery, and meat shop. It was thought by the Navy officers that the trainees would assist in relieving the labor shortage in the kitchen, an idea none too popular with the trainee. The assistance given by the trainees with the regular mess did not compensate for the time spent by the regular workers in supervising them. The work, however, did have a stimulating effect on the employees involved, as they found they had to know the how and the why of what they were doing to answer the trainees' questions. The practical work emphasized food preparation and the operation and care of equipment. To assist in food preparation, guide sheets were set up in which not only materials and amounts were given but method clearly indicated.

Two examinations were given, one prescribed by the Navy, and a practical one which consisted of a buffet dinner prepared and served by the trainees, with the President of the University, the Commanding Officer of the Ship, and other university officials and staff members as guests. Materials used by the Navy were featured: soybean meat loaf; macaroni and cheese, and new potatoes prepared with powdered milk; cabbage slaw dressing made with evaporated milk; hot rolls made with dried egg, soya flour and powdered milk; Bavarian cream with evaporated milk and frozen strawberries. The Captain's Cake gave occasion for a touch of fancy baking, a white cake attractively decorated. Four groups were graduated, the last one finishing in May when the training was discontinued. The situation did offer opportunity for a fine coordination of theory and practice.

Throughout, splendid cooperation has been given by the Medical Division of the Navy. Inspection of the employees is made weekly; all refrigerators are inspected daily. The medical staff has also been very helpful when there were accidents.

The Navy operates a sick bay, food for which is supplied by the central kitchen. A 5-compartment conveyor carrying 8 or 10 servings is used for the transport of food. The kitchen also supplies the needed utensils, and staples such as bread, milk, butter, and fruit juice.

ACCOMMODATING THE ARMY TRAINEES

In making adjustments for the Army trainees, much the same procedure was followed as for the Navy.

Four dormitories for women students and 6 nearby fraternity houses were vacated. Double-decked bunk beds again solved the housing problem. A central kitchen originally designed to care for approximately 550 had to

[1] Presented before the American Dietetic Association, Pittsburgh, October 19, 1943.

be adapted for 2400. Floor space was found in the basement for the vegetable preparation unit, two 80-gal. steam-kettles being put in the space thus vacated in the kitchen. An 80-gal. kettle was also installed in the basement so that part of the vegetables could be cooked there. Fruit and vegetable storage was also provided by installing a large, walk-in, electric refrigerator. The limited allotment of points on canned goods forces the use of fresh stock but in a town of 21,000 it is difficult to obtain sufficient supply of fresh vegetables, and the holding of an adequate supply requires refrigeration.

Cafeteria service, except for beverages, is used in the 2 large dining rooms where the 2 counters, extended service periods of about one and one-half hours, and continuous reseating give satisfactory results. The men come through by companies in a solid line and are seated by mess attendants. During the mess period the dining rooms are slowly filling at one end and being vacated at the other. The soiled dish unit is screened from the dining room and the trainees remove their utensils, stack cups and bowls, put silver in containers, scrape and stack the trays without assistance from the Foods Department. Women from the Foods Department are in charge of the dining rooms, wipe tables as vacated, and refill milk or coffee pitchers and sugar bowls.

Here, too, the staff had to be increased as the number of Army trainees increased, and approximately 105 are now employed. A supervisory dietitian, a production manager, and an assistant are in direct charge. The ratio of workers to patrons is approximately 1 to 23, or close to the quite generally accepted ratio of 1 to 20. Guiding limits are set for payroll expenditure and 4 groups recognized as follows: Group 1, includes supervisors (key positions), head cook, head baker, and head janitor. The wages here are $115 to $125 per month, with 2 meals which are figured at $12 per month.

Group 2 includes assistants, breakfast cook, assistant cooks, and head salad maker. The wages here are $95 to $110 per month.

Group 3 includes head dining room supervisor, and assistants in salad unit. The wages in this group are $90 to $105 per month.

Group 4 includes general workers for vegetable preparation and cleaning. The wages for these workers are $85 to $95 per month.

A well-organized central Purchasing Department serves the several units of the Foods Department, purchasing all staples. Both departments cooperate in the purchase of perishables, the purchasing office securing bids from the firms interested, and the foods office placing the order.

The Army makes use of the Health Center of the University where a university medical staff is in charge. The central kitchen prepares and transports the food as in the case of the Navy.

MENU MAKING FOR BOTH GROUPS

For both the Army and Navy the menu is made out by the supervisory dietitian a week in advance and goes for approval to the Commanding Officer. In the case of the Navy it also goes to the Medical Officer. An effort has been made to serve, as far as possible, food prepared similarly to that for the student body; that is, with special attention to the common foods, and to variety in the preparation of much-used items like cabbage, for example, or apples. The trainees have enjoyed the food, judging from the letters of commendation which keep coming in from those who have left. As a whole, the trainees have been easier to satisfy and more appreciative than the civilian students.

The following menus serve to show the menu pattern used:

BILL OF FARE FOR THE GENERAL MESS

Navy

Monday, Aug. 27, 1943

Breakfast	*Lunch*	*Dinner*
Fruit	Soup	Roast beef
Cereal, milk	Cold ham	Mashed potatoes
Boiled egg	Potato salad	Eggplant
Rolls, preserves	Radishes	Lettuce salad
Toast, butter	Mixed fruits	Chocolate pudding
Coffee, milk	Cookies	Bread, butter
	Bread, butter	Fruit punch
	Milk	

Army

Monday, Aug. 9, 1943

Breakfast	*Lunch*	*Dinner*
Banana	Cream of potato soup	Veal stew
Wheatena, milk	Hamburger, buns, mustard	Browned potatoes
Assorted dry cereals, milk	Stewed tomatoes	Peas
Creamed ham	Lettuce salad	Mustard pickles
Toast, butter	Watermelon	Bread, butter
Sweet rolls	Bread, butter	Gingerbread, lemon sauce
Coffee	Milk	Iced tea

The food is furnished at $1.00 per day per trainee under the present contracts with both Navy and Army. The present payroll for the Army mess runs approximately 12 per cent and the raw food approximately 52 per cent. The approximate raw food cost, or cost of the daily ration served, ran as follows for the months indicated. (The average number of Army trainees served in September is below 2400, due to the release on furlough of 600 for 7 days.)

Navy

	Approx. cost	*Approx. no. served daily*
June	$.4912	900
July	.4760	760
August	.4681	700
September	.4677	700

Army

June	$.6724	380
July	.5294	630
August	.5158	1160
September	.5101	2137

Results of a few recent drop studies of ration cost for the Army follow:

	Approx. ration cost	*Approx. total cost*	*No. served*
September 20	$.5938	$1381.54	2340
22	.4517	1059.86	2346
27	.6300	1492.48	2369
October 5	.5617	1202.24	2140

In comparing the Navy and Army costs it is significant that for the period covered the Navy was an all-women group. Also the women requested a somewhat lighter luncheon as the warm summer weather came on. The picnic type of supper was also planned on week-ends, packed in picnic style, and taken out to the park or into the country.

In checking costs from priced menus certain cost facts appear: a breakfast of fruit, toast, sweet rolls, butter, cereal, milk, and coffee costs approximately 10 cents; add a jam, jelly or marmalade and the cost is about 12 cents; add any breakfast item, as bacon, egg, French toast, chipped beef, and the cost is 14 to 17 cents. Milk at noon served without control means a luncheon cost of from 20 to 22 cents.

Breakfast cereals, too, come in for attention when checking costs. The prepared cereals in individual packages cost approximately $.016 per serving, the cooked, $.0044. Oatmeal and whole wheat cereal seem most popular of the cooked type, the consumption of which has steadily increased until it now equals that of the prepared. The last check made showed 1200 prepared cereals used, costing $19.20, and about 1200 servings of hot cereal costing $5.28. In desserts one notes that the home-made dessert competes successfully in cost and quality with all others. Thus a good cottage pudding with a pudding sauce costs about 1.25 cents. An efficient bakery unit is indispensable in the production of low-cost meals.

Milk is consumed in large amounts and for some time was served from pitchers on the table both at breakfast and luncheon. Several drop checks showed a consumption of from 1 to 1.2 quarts per person per day not counting that used in cooking. This made a heavy order for the local supplier, added greatly to the food cost, and was more than dietary adequacy required. Milk consumption is still unlimited at noon but for breakfast a half-pint bottle is served each person for cereal. This has reduced the morning milk cost about one-half.

Meat is a major problem. A central meat shop receives and holds all meats, preparing cuts and distributing them to the various service points upon order. Ice cream is also made at this central point. Split meat orders and part shipments necessitate constant changes in the menu. Very few meats can be served for less than 8 cents. In making checks of menu costs it seems clear that at present prices meat usually constitutes well over 50 per cent of the food cost. A number of checks recently made showed meat costing as much as 70 per cent of the total.

Some economies can be effected by buying the heavier legs of veal and yearling instead of light-weight lambs when available. For stew or lamb pie, on the other hand, the breast from the light-weight lamb is a better buy than from the heavier yearling because it carries less fat. On the present market, however, it is a question of taking what one can get.

In general, fresh fruits and vegetables, when available, have been found cheaper than other types. Insufficient points to cover all needs in canned goods has led to greater use of fresh vegetables and the reservation of points chiefly for fruit. Frozen items are also used: beans, peas, corn, cherries, strawberries, rhubarb. With frozen items, cost must be carefully watched. The limited availability of dehydrated items has made their use negligible. Dehydrated banana has been found usable in puddings and cake. Soybean flour (about 10 per cent) is used in pie crust where it expedites browning, as when used in griddle cakes. Fine or medium soybean grits, combined with corn meal, give a light texture to cereal and the mush browns quickly in frying. Soya products are sure to have an increased use, too, in stews, meat loaf, soup, gravy. Enriched bread and flour are used, also powdered milk. We do not use irradiated fluid milk.

In food production it would seem undebatable that what may be called "do-ability" is of first importance. The menu maker must consider adequacy and cost but she must also take into account the ability of the workers and capacity of the equipment to turn out the goods. Pie is served less frequently and cobblers and puddings more frequently. Items much liked but difficult to prepare are served to one part of the line and on the following day to the other part.

The service counter, too, presents problems, chief of which are speed and yield. Since the trainees are students and have to meet regular class schedules, speed is important. Careful control of the line to keep it unbroken and moving is important. It was found, too, that any item which offered a choice slowed up movement. On the counter choices are reduced in number or eliminated: not apple *and* orange, just apple; not assorted breakfast foods, just one, or at most two of prepared and one of cooked. Service by a worker of an item like butter is more rapid than self service.

The importance of regular, trained workers for counter service is often overlooked. If the planned yield of menu maker and cook is to be obtained, skill and intelligence must be used in serving. Well-trained counter workers, therefore, are a special responsibility of management which may not be neglected without unfavorable cost results.

Patron reaction to food is always interesting, even though sometimes annoying. It is very evident that appreciative comment or criticism is not indigenous to any section of the country. The chap from western Montana with trainee experience in Utah may, in Indiana, wish individual salads and halved instead of quartered fried chicken. With us certain likes and dislikes have seemed general. In the nonaccepted group we find soft-boiled eggs (hard-boiled are preferred), squash, eggplant (this vegetable, seemingly, is unknown to the majority who lack the spirit of adventure to induce a trial), and fish (received with little enthusiasm).

In the much-liked group we find baked ham, creamed chicken with biscuit, smothered steak, beef roast, baked pork chops, home-made rolls, raisin bread, chocolate pudding, ice cream, and dill pickles.

ATTENTION TO FOOD WASTE

Waste deserves a word. One large contributory element here, we find, is overpurchasing, followed by overproduction and overserving, which results in too much in the garbage pan, or in the refrigerator for reworking. Reworking is to be avoided for several reasons—you never get either your money's worth or the desired quality from reworked goods. Waste with us is most common in bread and rolls; the amount served should be limited, and additional amounts given only on request.

Commanding officers have given good support in our efforts to control waste. A poster, made by the trainees, carries the slogan "Lick the platter clean, to lick the Axis." The policy is to give the trainee all that he wishes but the food is to be eaten, not wasted, according to a ruling of the Mess Officer. A memorandum from the Mess Officer giving the anticipated number of meals to be served is a great aid in reducing waste through overproduction, especially for the week-end period.

Full use of all seasonal supplies is made, for instance, muskmelon and green corn in September. Nonseasonal stock like cauliflower in July and canned tomatoes in August, however, is avoided.

CONSIDERATION OF EQUIPMENT IN PLANNING MENUS

Equipment plays a large part in fixing the pattern of the menu. The steam-jacketed kettle may rightly be held chiefly accountable for monotonous diet characterized by soups and stews. In mass feeding the oven and sectional steamer need a larger use if varied preparation is to be possible. The best size for steam-kettles may be debatable, but certainly they may be too large. Two 40-gal. kettles will produce a better looking stew than one 80-gal. The heat penetrates more slowly to the center of the larger kettle, requiring more stirring. The covers, too, need to open to full capacity. The cover with smaller opening leaves an unstirrable portion at the back and also makes cleaning difficult. The steam-kettle also needs to be provided with a steam gage. The usual 15 to 20-lb.-line pressure results in too high a temperature for all foods

except perhaps soups. The university engineer solved the problem of exhaust and drainage for our additional kettles which had to be placed outside the canopy area: one of two metal, removable pipes leads overhead from the steam exhaust to the canopy, and the other from the faucet along the floor to the drain.

Large containers, not cooking vessels, are much needed. We found a No. 2 galvanized iron washtub especially useful in both kitchen and meat shop. The crease at the bottom was loaded with hard solder to make washing wholly satisfactory and sanitary.

ACCOUNTING PROCEDURES AND OTHER GENERAL CONSIDERATIONS

The records kept by the office of the food unit consist of a day-journal with a breakdown from which gross adequacy of diet can be determined and losses or too heavy consumption of selected items such as butter, bacon, coffee, noted. A running inventory is used to serve as a check on the physical inventory. The daily priced menu gives daily information as to ration cost, and enables the management to determine control policies without having to wait until the end of the month.

In closing we should like to speak of two aspects of the work which give special satisfaction. The work in mass feeding offers an opportunity to introduce to large groups of young people the nutrition yardstick which has brought our knowledge of nutrition out of the laboratories and made it available to the rank and file in grocery store, at home, and in institution kitchens.

An opportunity is also offered to teach what may be called "food geography." With the movement of trainees from the West to the East, from the North to the South and vice versa, comes the chance to introduce local foods new to many of the trainees. The New Englander is finding the pinto bean of the Southwest as good as his own cranberry bean. The trainee's experience in food should count for an added number of fruits and vegetables in his known and liked list. Every newly accepted food means a less restricted, more varied diet, the base on which we know dietary adequacy rests.

What Is a Home Economist?

Where should home economics begin and leave off? What specially is the area of learning most suitably classed as home economics? Should we expand and try to take in these new fields and run the risk of becoming superficial or confine ourselves to a quite limited area and run the risk of becoming too narrow? . . . Vocational home economics has come into being and there has been no satisfactory answer to the question, "How does it differ from other home economics?" Even the question, "What is a home economist?" is difficult to answer and perhaps cannot be answered. To my great surprise, when I remarked to one of our graduates, "How does it feel to be a practising home economist?" she replied, "Oh, I never think of myself as a home economist. I'm a dietitian." "It's just a point of view—anybody interested in homes is a home economist," says one. "It's someone graduated from a college or university with a major in home economics," says another. "It's someone in a recognized professional field, such as teaching or research or dietetics," says another.—*Bane, L.: Home Economics—Whither Bound. J. Home Econ. 36: 1, 1944.*

Home Economics and the Professional Attitude

An attempt at phrasing a tentative definition of "a professional attitude" might lead to some such statement as this: "A professional attitude is an expression of habitual modes of thought concerning values, situations, and things, indicating that worthy professional goals serve as directives to the individual and determine his actions." . . . The Hippocratic Oath, a cogent and succinct statement of those habitual modes of thought and responses in action which make up the accepted professional attitude of the physician . . . might well be required reading for all interested in professional attitudes. It points to the responsibility of those entering medicine to so employ themselves and direct their interests that the renown of the field may be enhanced; it pledges them to enter houses only "for the benefit of the sick," to abstain from every voluntary act of mischief and corruption, to keep secret that which should be kept secret, and in "purity and holiness" to pass their lives and practice their art.

The professional attitude of the home economist should be philosophical; it should be rational, expressing concern with "a spirit or method of approaching experience rather than a body of conclusions about experience." . . . [It] should be scientific. . . . [It] is home and family centered. . . . [It] shows respect for and concern with the profession of which she is a part. This is indicated by a willingness to relate herself affirmatively through organizational and personal effort to safeguard its standing and insure its development. . . . Because "what you are speaks louder than what you say," the home economist must express in her personal life not only those familiar attributes of a cultured person but also physical fitness, mental alertness, buoyancy of spirit, and zest in service.—*Justin, M. M.: As An Educator Sees It. J. Home Econ. 36: 6, 1944.*

ARMY AND NAVY MEAL SERVICE AT HARVARD[1]

ALICE M. FENNO

Director of Dining Service, Harvard University Graduate School of Business Administration

THE life of Harvard University has extended over 307 years. Since the time of the Indian Wars against King Philip in 1677 when the graduating class was reduced to three students, the University has taken an active part in all of the wars in which the Colonies and the United States have been engaged. In this present war, it is not surprising, then, that Harvard was the first non-military university in this country to which the Army and Navy chose to send 7000 officers and officer candidates for military training.

I am particularly concerned with Harvard University Graduate School of Business Administration from which all Navy supply men are graduated and most of my comments result from my experience there rather than with the University at large.

In May 1941 the first advanced course of the Quartermaster R.O.T.C. Unit in the country was established here. In June 1941 we enrolled our first group of 400 Naval Reserve Officers. From then on we expanded at a rapid rate. We reached the point where not only our mess halls but our storerooms and refrigerators were fairly bursting. We realized that, while we were financially well off, it was folly to attempt to continue operations under such crowded and unfavorable conditions.

The Navy was anxious to add again to their numbers and through the efforts and foresight of Harvard executives a new building was erected. On November 15, 1942 we served our first meal in the new $150,000 mess hall. It was most appropriate that this building should have been named Cowie Hall for Rear Admiral Thomas Jefferson Cowie, for it was at his insistence that the first attempt was made in 1882 to serve a healthful balanced ration in the Navy. He was the man who banished "salt horse and cracker hash" from the high seas.

It is believed that in 1943 Harvard will have operated the greatest food business in the world, excluding chain restaurants, over $3,000,000 having been expended for Army and Navy feeding.

BUILDINGS AND EQUIPMENT

As far as eating facilities were concerned, the Business School had 6 student dining halls, a faculty club, a students club, and a cafeteria for women and office employees. Each of these separate dining halls had very small pantries served from a central kitchen in the basement. This arrangement necessitated a very expensive type of service. The new Cowie Hall is different. It was planned to do a capacity business with a minimum of labor and expense thus making it possible for us to pay our way. In 15 months we had outgrown the 6 Business School mess halls, moved into Cowie, and after 11 months we have outgrown Cowie Hall. With facilities designed to serve 600 men we are serving 1200. Once more we are in the process of expanding our building. The additions will be concentrated mostly in store, locker, trash, and refrigerated garbage rooms and a few large pieces of equipment.

The original Cowie Hall is a one-story frame building, 200 by 100 feet. The setup is ideal and simple. From the front to the back and running parallel with each other we have a foyer, a mess hall, a double cafeteria counter and a kitchen, with windows on three sides of both kitchen and mess hall. While the equipment is not fabricated from materials we would choose, it is ample, convenient and well laid out. [Mimeographed copies of the blueprint of the lay-out were distributed in connection with Miss Fenno's address at the Pittsburgh meeting. Ed.]

In the food warmer, which forms a part of the wall construction, the food is placed from the kitchen side and removed from the counter side. Sterilizers, designed and built by our own Engineering Department, were added to our dish machines as a third step in dishwashing.

The Navy stainless steel knives, forks and spoons are picked up from tables, and the 6-compartment regulation trays from specially designed 4-wheel metal trucks before the men reach the counter. These trucks are approximately 6 feet long, 18 inches wide, and 4 feet high. The trays are slid into grooves about one inch apart in the upper and lower side of each of the 4 metal shelves as the trays come out of the dish sterilizer; this allows trays to dry without water spots. When the truck is filled with 200 trays, it is wheeled out to the mess hall.

We are also building a sterilizer for pots and pans designed from one we had seen in an industrial cafeteria. It looks like a large galvanized pot sink with a cover. Pipes punctured with small holes are placed across the bottom and along the sides. The heavy cover is lifted or lowered with a pulley and a foot pedal releases live steam.

Most of our equipment is galvanized or polished steel which means that we actually spend 18 hours a day scouring the 82-ft. polished steel counter tops and shelves in order to keep them presentable. The slightest amount of moisture will stain and rust polished steel very quickly.

ORGANIZATION

The Navy really wanted a man to manage Cowie Hall, but we finally convinced them that it was just barely possible a woman might do a fairly good job. So I placed my first assistant, Opal Bowers, in charge of Cowie Hall, knowing that she could and would do the job commendably. Together we selected the key employees and other workers. Today Miss Bowers, president of the Massachusetts Dietetic Association, has 3 graduate dietitians in charge of food production, service and schedules.

To serve 1200 men 3 times a day a first cook, second cook, 10 regular cooks, a butcher, and a baker, among other workers, are required to do the work. The ratio of employees to the number of persons served over a given period was 1 to 15, while the ratio at the Business School previously had been 1 to 12, and approximately 1 to 6 or 8 in halls providing table service.

There have been many employee problems but we have an excellent personnel department to help us cope with them. Every employee in the entire University must be registered with that office. When the last of our 150 civilian student waiters left us last spring, our director of personnel relations did not give up. She appealed to 28 churches of Greater Boston, asking for women to fill vacancies. She also appealed to them from the standpoint of patriotism and asked for part-time workers. The results were gratifying. They were paid 43 cents an hour with meals, which was our wage rate for this type of work.

The summer vacation released high school boys and girls and, while they saved the situation for us at the time, we were truly glad to see them go back to school. They needed far more supervision than we had time to give.

The Caretaking Department also cooperates in helping our labor situation by asking their part-time maids to start work earlier in the morning, thereby allowing them to be of service to the Dining Hall Department during the noon meal.

[1]Presented before the American Dietetic Association, Pittsburgh, October 19, 1943.

From 1941 to the present we have changed our types of service many times to meet labor problems and rising costs. We changed from table service in a comfortably-filled room to table service in a crowded room, to family service and finally to cafeteria service. Recently we eliminated all choices from the menu. We asked the men to clear their own tables and take their trays to the dish room. Each change saved us labor and money, but this last change saved more than any other perhaps. For instance, in Cowie Hall it took 24 bus people to clear the tables at each meal. Having the men remove their own trays reduced this number to 8, saving approximately $1450 a month or a reduction of 10% in payroll.

Our two dish rooms were planned with the thought that it might be necessary at some time to require this just-mentioned type of service, so we merely had to remove the doors between the dish rooms and the mess hall and place empty metal boxes on the dish tables to receive the various pieces of equipment. Paper napkins in holders attached to the walls at the exits provided a means for wiping hands. The Navy officers and midshipmen accepted this tray removal arrangement without comment. In order to avoid possible repercussions, however, we did not request men to remove the waste from their trays. The Army is also eating from trays and clearing the tables, but the arrangement is not quite so efficient.

MENUS AND BULLETINS

Much valuable information comes to us through the United States Navy Commissary Bulletin issued by the Navy Market Office, Ninth Naval District, Chicago, and through the master menus prepared by the Office of the Quartermaster General, Washington. There are also menus prepared by the School for Bakers and Cooks at Fort Devens, Massachusetts.

We study the master menus which come each month, 2 months in advance, but do not necessarily follow them. We do, however, keep within their given number of ration points. Our own menus, written for a 2-week period and 2 weeks in advance of their use, give us a fairly good overall picture and lessen the possibility of undue repetition.

In writing menus we bear in mind the simple fundamental rules of nutrition and the seven basic food groups, and the availability of products. For instance, we used freshly squeezed tomato juice during the record crop this summer, and sweet potatoes during their peak. We think of the qualities of texture and flavor, whether crisp or soft, cold or hot, the colors of the food, and how the meal will look on a Navy tray of gray stainless steel. It is far more difficult to make the same meal inviting when served on a tray than when served on a plate. For example, picture a vegetable luncheon of a baked potato, chopped fresh spinach, a broiled tomato, French-fried eggplant and a spoonful of creamed carrots—an attractive sight on a dinner plate, but quite the reverse spread over three compartments of a tray. We have to work twice as hard to make the tray attractive.

We have to think of ration points and costs and whether the kitchen is equipped to take care of all we have planned and whether the counter personnel will do a good job in serving the meal. We take pride in our ability to serve 1200 men good toast, good wheat cakes and good fried eggs for breakfast.

It takes one counter person to serve each single item on the menu. Our lines do not move rapidly, averaging only 10 to 12 men per minute. There is apparently no necessity for greater speed, therefore we do not urge it. A man may have a second serving of soup, made dishes, cereals with cream, vegetables, bread or coffee, but not second servings of meat, milk, butter, fruit or desserts.

No alternate entrée is served on fish days or when an unpopular meat such as liver is served. We do try, however, to counterbalance this by serving popular vegetables and appealing desserts on such days. Recently we eliminated the first course at some of our dinners which saves from 1 to 5 cents per meal, or around $60 a day. We need to plan the meal carefully when we do this, for the first course often provides a goodly portion of vitamin C.

All groups of Army Air Force School men were required to keep a chart for a period of 5 weeks showing the length of time it took various food items to travel from store to table in their particular units. In the beginning we did not reach the goal, but we progressed and the cooks were interested in trying to do a better job. These charts were sent to the Nutrition Officer at the Army Air Force Technical Training Command, Greensboro, North Carolina.

The Army keeps a food frequency chart posted in the mess hall at all times, which is checked by the duty officer as each meal is served.

From a questionnaire answered by each man in each class concerning the food and service we are able to pick up many pointers. From them we learn the likes and dislikes of the men. Some of the most popular items are: roast beef, roast chicken, baked ham, frosted peas, corn, green beans, ice cream, apple pie, and chocolate cake. Less popular items are: broiled liver, boiled beef tongue, creamed dishes, mashed turnips, summer squash, buttered beets, sherbet, jello, and crackers and cheese. The men do not like oily salad dressings, very soft boiled eggs or cold rolls. They like to see the bus-boy's hair combed and his nails clean.

We have to be punctual. Classes or flights will be scheduled to enter the mess halls at a given time and there will be a continuous line until the entire group has been served. A Duty Officer helps us in opening and closing a hall. Sometimes I think he is too punctual, but I expect this is a part of military discipline. Any complaints the men may have are made through the Duty Officer.

BUYING

We are working under a Government contract and buying is done directly by us. We hold priorities and it is naturally easier for us to obtain food than it is for those who are serving civilians. We place our meat orders 10 days to 2 weeks in advance to ensure deliveries. Fruits, vegetables and staples are handled much as in the past but the number of deliveries is limited. It is now possible but not mandatory for us to buy "set-aside processed foods" from Army sources. This should help us with costs.

To protect ourselves, a year ago when we first began to hear of a meat shortage, we purchased considerable meat and placed it in storage. Frankly, we do not like it; the shrinkage is far too great to warrant this practice except in emergencies.

RATIONING

Since the beginning of food rationing we have undergone a series of changes. As others did, we modified our menus, serving more of the fresh and less of the canned fruits and vegetables and stretching our meats where we could. We determined how many points and pounds we could safely use each day and began daily consumption records. We found it difficult to stay within limitations until we became accustomed to the smaller quantities of rationed foods. At Cowie Hall, which is entirely for Navy personnel, the situation is simple. In our other group of buildings, however, we serve from one kitchen and issue from one storeroom to the Army Air Force, the Army Supply Officers, and to civilians. Separate ration checks are received from each group and monthly ration statements are submitted

to all groups. By handling the entire ration system on a percentage of total meals served, we have satisfied the Army and our local Ration Board and have kept our own records simple and workable.

Before rationing we spent 8.1 cents per man per day for fresh fruits and vegetables and 9.1 cents for canned, frozen, and dried fruits and vegetables. Now we are spending twice as much for the first group and only one-half as much for the second.

ACCOUNTING

Realizing that the Army and Navy would expect very detailed figures concerning our mess halls, we made good use of the Business School Research Department and asked Mr. T. F. Bradshaw, a research man and an able instructor in accounting, to utilize the essentials of both the Navy and our own cost accounting systems and give us a combination that would be simple and easily understood by all.

In Mr. Bradshaw's article, "Institutional Food Cost Control Under War-Time Conditions," in this JOURNAL for June 1943, he says, "A food cost control system must be a way of systematizing a part of the work of a food director, providing him with the tools necessary to do a better job." Food control begins in the storeroom where each item must be charged out. Daily issuances in themselves do not give a true picture of a daily food cost. Instead, we must charge to any one day only the food actually used for meals served on that day. This means that someone with patience and a knowledge of foods and prices must get from the cooks and bakers the actual quantities used in each item prepared and served. The total food cost for that day divided by the number of rations served gives us the daily ration cost. In Army and Navy terminology a ration is the allowance of food for the subsistence of one man for one day. With such information available we know on the following day whether our ration cost was high or low and can solve our problems before they get out of hand.

Our daily cost sheets are divided and subtotaled into the various food classifications. At the end of each week, by totaling these, we have the food cost and the amount spent for each classification. Our payroll provides us with the necessary labor figures and by using an estimated overhead figure we have the information for a profit and loss statement. We try to have this statement for each week by the following Wednesday. The important figure is not necessarily the actual dollars of profit or loss but the food cost percentage, the labor cost percentage, the average ration cost, the percentage of absentees and the percentage distribution of money spent for the food classifications.

STANDARDS AND SANITATION

Standards must not be lowered, even though at times we think it impossible to keep them. You all know the spots that need watching, namely: quality of purchases, standardized recipes, standardized portions, control of waste, correct refrigerator temperatures, scheduled cleaning, dishwashing procedures, etc. With good supervision you can do the job, even though your employee situation is difficult.

Periodic and unannounced Army and Navy inspections have truly helped us to keep in line. The employees take pride in "getting by," as they say, with a good mark. Groups of men studying disbursing and supply go through our kitchens as a part of their regular course and do their share to keep us alert. Four of the groups of 80 men each are taken through the kitchen every 2 months and Miss Bowers and one of her assistants explain the equipment, do a little lecturing and answer questions. On these days we plan to have an extra box of apples and a pan of chocolate cake handy. Otherwise the night meal at "Bowser College" might be a bit slim.

Sanitation is probably the most important phase of the business and we pay a great deal of attention to it, realizing what carelessness could do to us. Some of us—perhaps more of us than will admit it—have had some unhappy experiences with an outbreak of acute diarrhoea. It certainly is not a pleasant feeling to learn early some morning that 20, 50 or possibly 100 men were ill during the night. The first thing we do in such a case is to check the menus for the previous day and account for every single bit of food used in every single item. We call the Harvard Hygiene Department and sometimes the City of Boston Board of Health Department and ask them to inspect the kitchen and refrigerators and to test for certain organisms that might cause trouble. We look over our employees, question them and single out any who may not have been feeling well, or who may have been absent for an unexplained reason. If there are such employees, they are sent to the clinic for a physical examination. In none of the three or four experiences of this kind have we ever found the cause. The illness, never violent, has always cleared up within 6 to 12 hours.

The Hygiene Department has always made periodic tests for bacteria count from clean china, glass, silver, milk, ice, water, etc. in all the houses of the University and I believe that Harvard is among the very few universities that publishes such findings in an annual report which anyone interested may read.

Any employee known to have diarrhoea, a cold, or a cut on his hand is not permitted to work. He is sent to the Employees' Clinic and is paid full wages for any illness the doctor terms a student menace or an industrial accident. We know that the employees "play it on us" once in a while and get a good day's pay probably for sitting on the beach, but the percentage of those who take advantage of the system is small.

We try to make a daily personal inspection of all food handlers. Signs in the toilet rooms remind the employee to wash his hands and a sign at the exit asks him if he *has* washed his hands.

To supplement the laundry supply, which has been very irregular, we purchased two thin white seersucker dresses for each woman and paid her 75¢ a week for laundering them.

Much of our success is due to the very capable and efficient assistants and supervisors who are working with us. There are 6 of these young women who graduated from the Administrative Student Dietitian Training Course given at the Women's Educational and Industrial Union. The director of this course, Mrs. Quindara Dodge, has developed in these students the idea that hard work is necessary to do any job well. She has also instilled into them the knowledge and the theory they need and has made it possible for them to get the necessary experience. I wish that more home economics graduates all over the country could realized the value of a similar year of post-graduate training. There really is no comparison between the fitness of these women and that of those who have not had such training.

Now, in two sentences, I will tell you how to get along with the armed forces: Don't let some brand new duty officer tell you how to run your business. Act the part of an Admiral or a General, not that of a Third-Class Storekeeper.

THE NEED FOR BETTERMENT OF CHILDREN'S DIETS[1]

JULIAN D. BOYD, M.D.

Department of Pediatrics, College of Medicine, State University of Iowa, Iowa City

THE diet practices of children are not constant or uniform. One cannot properly define the diet of the average child, because of the inconstancy of children's diets from region to region, from one season to another, or even among children from the same household who are served the same foodstuffs. There is good evidence, however, that the majority of children fail to receive diets which measure up to currently accepted standards of excellence. This report and its conclusions are based on the premise that the defects of children's diets are noteworthy and that efforts should be made to correct them.

In our Department of Pediatrics, all prescribed diets are designed to promote optimum nutrition as well as to control the patient's specific disorder. During the past eighteen years we have had opportunity to observe the long-term course of many children whose diets were regimented in accordance with such a principle. The wholesomeness and vigor of such children as a group have stood out in sharp contrast to the status of others observed concurrently who were without diet supervision. Such observations led us to postulate early in the course of our studies that the average child's dietary regimen was not sufficient for his needs. All subsequent observations have strengthened the earlier impressions. We are convinced that the universal adoption of better diets for children would lead to improved health and physique, and to lessening of disease.

In some respects the diets prescribed for our subjects of study have been diverse in nature. They have included regimens for the child with diabetes mellitus, with chronic intestinal indigestion, with chronic undernutrition, with other chronic disease, or with no disease at all. Viewed from the standpoint of their provision of recognized nutritional protective factors, on the other hand, all the regimens have been remarkably similar. Recent comparison of their content with the recommendations of the Food and Nutrition Board, National Research Council (1), indicates that each of the regimens employed approximated or surpassed the Board's recommendations. For these reasons one is justified in accepting the records of all of these children jointly for the study of response to controlled dietaries of defined quality.

EVIDENCE FROM DENTAL RECORDS OF NEED FOR DIETARY IMPROVEMENT

The dental records of our subjects have offered the most tangible evidence in favor of diet supervision. Fifteen years ago we first published our observation that the use of controlled diets had lessened the incidence of tooth decay and arrested its course (2). This conclusion has been borne out clinically in recurrent observations which are being continued up to the present time. The protection of teeth against decay has been seen in children with different disease entities and without disease, under widely different types of menus but under regimens of comparable nutritional worth. Statistical analysis of records up to the present has been limited to children with diabetes mellitus, since such subjects have been foremost in numbers, in duration of individual observation, and in strictness of dietary supervision. The statistical results do not differ qualitatively from the clinical observations relating to nondiabetic children living under supervised dietaries. In all groups, the foremost variable in the degree of caries control has been the constancy with which the prescribed regimen has been followed.

Several aspects of the statistical analysis of the dental data from the records of the diabetic children already have been published or are in press (3–6). This report is designed to summarize these completed studies, and to supplement the presentation made before this Association two years ago (7). On the basis of this summary and with reference to corresponding reports of other workers, consideration will be given to the need for improvement of diets of the child population at large.

The scope of the dental studies completed to date has been limited to the time of collaboration with the pedodontist, Dr. Charles L. Drain, between the years 1925–37, when 111 individual diabetic children were observed recurrently for periods exceeding 3 years each. The average duration of observation exceeded 5 years for each child. The group comprised about equal numbers of girls and boys. The age of the subjects at the time of initial examination ranged from 1 to 14 years. Of this number, 55 observed for 3 years or more after they had shed all carious deciduous teeth have been used as the basis for the more exacting analysis because their records are not complicated by factors relating to the loss of teeth initially present in the mouth. Each child's records have been analyzed individually; cross sectional averages of group status have been avoided because of the masking of personal variations through such pooling of data. Extent of tooth decay has been expressed in terms of the number of tooth surfaces which presented obvious or presumed evidence of current or of earlier caries. Rate of progression of decay was measured in terms of the total number of newly carious surfaces, divided by the duration of observation. By graphic methods, the regularity of appearance of newly carious lesions has been portrayed for each child. On the basis of these studies, the following summary of conclusions has been drawn:

1. The rate of caries progression over periods of years was lower in most of the diabetic children than the rates observed or predicted for the usual child population. The typical subject developed no further caries whatever while under diet supervision. The median annual increment of newly carious surfaces was less than one-fifth, and the average increment about one-third of that predicted by Klein and his colleagues from the study of Hagerstown children (8).

2. The average caries increment values were weighted heavily by the development of extensive caries in a few subjects who failed to follow the prescribed regimen for any significant period or who abandoned it even though its value in controlling caries initially is demonstrable. The only subjects who showed noteworthy caries advance at any time throughout observation were those who did not conform to the prescribed dietary regimen.

3. The amount of caries observable in children who had reached their teens was notably low in those who had followed the prescribed diet for a significant time prior to reaching that age. Children adopting the prescribed regimen before their permanent teeth had erupted were uniformly free from caries of permanent teeth when they reached their teens. In those who had but recently adopted the diet regimen, on the other hand, the initial incidence of caries in the early teens was similar to that described for the general child population of corresponding age.

[1]Presented before the American Dietetic Association, Pittsbrugh, October 21, 1943.

4. Arrest of caries was observed in children of all ages, in deciduous and in permanent teeth. The earlier the diet regimen was established, the greater was the freedom from residual caries at older age levels.

5. The dental enamel as well as the dentin was protected against decay. The developmental pits and fissures which are considered the first point of attack of caries in the occlusal surfaces remained unaffected by decay in the typical subject of this series for periods of years, even though no dental prophylactic measure had been employed.

INTERPRETATIONS OF THE EVIDENCE

From the foregoing we have good evidence that the incidence and rate of progression of tooth decay in a large group of children have been reduced to a negligible level and maintained in that status for periods of years. Large numbers of children have approached maturity with teeth free from caries. Further, there seems little room for doubt that the nature of the children's diets was the responsible agent. Here we have a tool which if properly employed offers promise of abolishing tooth decay, the commonest disease affecting civilized mankind. What are the agencies associated with the diet which lead to the prevention of tooth decay? This question has not been answered to the satisfaction of all students of caries. Conflicting philosophies as to the mechanism of caries production have led to diverse interpretations of the phenomenon we have reported. One school of thought works on the assumption that tooth decay is attributable solely to regional forces working within the oral cavity; while that of another is that the status of the tooth reflects the current and past metabolic integrity of the body as a whole. The regionalists place emphasis primarily on the acidogenic quality of the oral flora and on the pabulum for bacterial growth which the food constituents afford. Members of that school have accepted the Iowa findings described herein, but have interpreted them as evidence that sugar should be prohibited as a dietary constituent. Another aspect of the controversy has to do with the role of fluorine salts in caries prevention. There is acceptable evidence which seems to establish that individuals who ingest fluorine in optimal amounts show increased resistance to caries.

The Iowa data are being reviewed to learn what evidence is at hand to clarify the mechanism of the effect of diet on caries. Some conclusions already have been reached. These may be summarized as follows:

1. There is no evidence that fluorine was the responsible agent for the low caries score in the teen-aged children; by inference the same applies to the group as a whole. Information was available as to the regional fluorine content of public and private water supplies throughout the state. The range of values recorded extended from none whatever to amounts greater than are recognized as desirable. The maximum and minimum fluorine values reported for specific areas were correlated separately against the caries score of children from the same area. Although the coefficients for the general averages showed a trend toward correlation, the degree of correlation was without statistical significance. Similar correlations showed highly significant correspondence between the duration of diet control and the reduction in caries incidence.

2. Early in the Iowa studies, some reviewers of our data attributed the caries retardation to the high content of fat in the diabetic diets. Subsequently the fat content of our diets was reduced markedly, yet the arrest of caries still was outstanding. A statistical study of those data has been completed within the past few weeks, based on the comparison of caries scores of children receiving diets preponderantly high in fat with those of the same and of similar children receiving diets with a much lower fat content. The data indicate that the caries-protecting power was as great with one level of fat ingestion as with the other (9).

3. The role played by carbohydrate foods in caries promotion can be appraised in some degree from the study of the effect of varied ingestion of fat. The diets which were highest in fat were correspondingly lowest in carbohydrate content; the level of protein ingestion was constant for each diet, in terms of unit body weight. There was no increase in the caries score with the use of larger amounts of carbohydrate. The foods used to increase the carbohydrate allowance were bread, cereal, potato, and fruit. About half of the increase was supplied as simple fruit sugars, the other half by starch foods. In all, the higher-carbohydrate diets had twice the carbohydrate content of the lower-carbohydrate diets and would yield one and a half the content of potential glucose. Doubling of the carbohydrate intake did not lead to any increased rate of caries development.

Leaders of the regionalist school of caries causation have expressed agreement with the principle that children's diets should be nutritionally complete: not from the viewpoint of the teeth but as a general health measure. The possibility of benefit to the teeth from such a nutritional regimen has been denied by this group, unless the ingestion of sugar is prohibited as a part of the imposed diet regimen. We on the other hand have been convinced, from our observations of nondiabetic children living under good dietary regimens with no prohibition of sugar, that caries will not develop or progress if the child's intake and utilization of nutrients approximate recognized standards of excellence. Statistical proof of these impressions will require additional research: the clinical observations which support our belief are as convincing as were the clinical observations of caries arrest in the diabetic patients prior to our statistical analysis of the data.

SHOULD SUGAR BE RESTRICTED?

A referee might conclude that there is no vital difference in the views held by the two schools of thought, as far as they apply to the practical prevention of caries: let the children's diets be made complete in all regards, and at the same time let sugar ingestion be kept at the lowest possible level. Unfortunately the matter is not so simple as it sounds. Few children can be regimented to the degree imposed on the children with diabetes. The latter group of children have a disorder which requires strict regimentation, and with abandonment of regimentation the disastrous effect on the child's state of health may serve as a strong motivator for its resumption and continuance. Sugar as such is not an essential ingredient in any diet. It does much, however, to make foods attractive. Moreover, it serves as a cheap and readily available and utilized source of energy. Used properly, it is a valuable dietary adjunct. Unless there is good and sufficient evidence that sugar in itself is a cause of or an accessory to the production of caries, there is no justification for prohibiting its use on dental grounds. Even though sugar contributes nothing to the diet other than flavor and calories, it can serve to complete a diet which without it would be lacking in energy content. If suitable amounts of protective foods are eaten, all ordinary needs for protein, minerals and vitamins will be met. However, a diet made up solely of the recommended amounts of the protective foods will supply only about 1200 calories, or about half enough for the child of 12 years. The vegetables, fruits, milk, meat, and butter will meet his need for protective foods, but will fail notably to meet his caloric requirements which justi-

fiably can be met through foods primarily of value because of their calorigenic qualities.

If the unthinking physician or dentist tells the parent to give the child a good diet but to omit sugar, or starch, or fat, there is great likelihood that the child's whole diet will be imbalanced through inadequacy of calories. If such authorities insist on the restriction of sugar or of any other nutrient from children's diets, let them recognize that their prohibitions in themselves tend to imperil the child's nutritive state. If diet suggestions are to be given, they should be inclusive rather than exclusive, and should be tailored to meet the needs of the whole body, not to serve merely a regional function.

FAULTY DIETARY PRACTICES ASSOCIATED WITH DENTAL CARIES AND THEIR CORRECTION

The studies performed at the University of Iowa indicate that dental caries is preventable through dietary means. Several studies performed elsewhere have led to similar conclusions. Special mention should be made of the studies by White and Howe at the Forsyth Clinic (10), Krasnow at the Guggenheim Clinic (11), McBeath and his colleagues at Columbia University (12) and those recently reported by Bowes based on studies of Pennsylvania children (13). Each of the studies mentioned offers evidence that caries can be lessened in the general child population through dietary means. The great prevalence of caries in the child population, therefore, can be accepted as evidence that prevalent dietaries are not of the type or degree of excellence necessary to protect teeth from decay. The comparison of prevalent children's dietaries with the recommendations of the National Research Council also indicates that suboptimum nutritional practices are the rule rather than the exception.

Tooth decay is not the only handicap imposed by faulty diets. It is only reasonable to believe that regimens of diet which permit the development of tooth decay can also cause additional unrelated disturbances of function and of structure. The many evidences supporting such conclusions cannot be discussed here. Surely the evidence of prevalent substandard dietaries among the general child population is a cause for serious concern. No community, no social group, is free from evidences of substandard nutrition among children. Most of the tooth decay in young adults was acquired during childhood. Many persons reach their period of useful maturity handicapped by defects which have arisen because of their diet practices throughout childhood. It is time that all forces and agencies concerned with health and with nutrition be mobilized to improve diet habits. The sense of complacency which the public at large feels regarding its own nutritional status must be jarred if improvement is to be expected.

Essentially the matter of betterment of diet practices is one of education. In peacetime sufficient foods can be produced and purchased by the majority of our population to raise the prevalent nutritional level significantly. Lack of insight and of knowledge regarding nutrition must be remedied. Situations which predictably lead toward inadequate food practices should be pointed out and steps taken to correct or prevent them. It is easy and comforting to state that a child can be assured an adequate diet through the daily ingestion of milk, meat, eggs, vegetables, fruits, fish liver oil, and additional calorigenic foods. It comes as a shock to one's complacency to recognize that certain commonplace practices carry with them great hazards of diet inadequacy. The following enumerated practices fall into such a category:

1. *Breakfast small, poorly chosen, or omitted.* It is unlikely that a child will succeed in meeting his day's nutritional needs unless he has 3 full meals.
2. *Lunch eaten away from home routinely.* Lunches carried to school seldom supply the noon meal's proper quota of nutriments. Lunches purchased at school or at lunch counters as a rule are similarly incomplete, unless menus are carefully prepared and the child's choice is guided.
3. *Eating practices not supervised by an adult.* The parent who does not exhibit good insight as to food needs cannot be depended on to offer the child the foods he will need.
4. *Responsibility for food choice left to the child.* The untrained child does not have inherent judgment sufficient to assure his choice of an adequate diet at all times, even though he is offered a wise selection of foods.
5. *Limitation or prohibition of any of the "calorie foods":* whether sugar, starches or fats. About half of the caloric need will be supplied through suitable amounts of the protective foods; with limitation of any of the concentrated forms of energy, risk of caloric inadequacy is outstanding.
6. *No inclusion of fish liver oil or its equivalent.* Whereas sunlight can supply vitamin D for the child exposed to the sun, there is every likelihood that the child throughout the school year will receive insufficient solarization to meet his needs.
7. *Failure to eat meat, eggs, or equivalent foods daily.* Inadequate intake of protein foods is more common than is realized. Milk and vegetable products supplement protein supplies, but are not sufficient in themselves in amounts readily consumed.
8. *Failure to eat liberal servings of vegetables and fruits daily.* Many children whose diets otherwise are fair or even good are handicapped because of the insufficiency of specific minerals and vitamins which will be provided through use of vegetables and fruits.

Few children escape inclusion in one or more of the categories mentioned. The problem of assuring proper diets is thus fundamentally related to habits of living. Any program designed to better conditions must take these factors into account. With re-education of families and with greater insight on the part of professional workers, we may hope to see these predictable factors diminishing in significance.

The current widespread campaigns relating to betterment of nutrition are serving a valuable purpose. If people can be brought to realize that the diets of most children need improvement, and that current dietary practices are causing avoidable and serious handicaps to the child's welfare, the rate of nutritional advance will be accelerated.

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A COMPARATIVE ANALYTICAL STUDY OF MEAT EXTENSION[1]

DANIEL MELNICK, PH.D., RICHARD J. BLOCK[2], PH.D.,
HILLARD W. HIMES, B.S., AND BERNARD L. OSER, PH.D.

Food Research Laboratories, Inc., Long Island City, N. Y.

MEAT was one of the first items in the dietary to be restricted due to the exigencies of war. Conservation and a more equitable distribution of the meat supply by means of a rationing system have, of course, materially affected the character of the American diet, since meat had been the nucleus of the major meal of the day. To satisfy the popular desire for meat dishes, attempts have been made to "extend" meat by the use of some filler, usually bread crumbs. The nutritional quality of bread, however, is inferior to that of meat so that extension of meat by use of such materials may result simply in physical but not nutritional extension.

It would seem possible that a true meat extender could be made from a mixture of a number of inexpensive, readily-available, nutritious food materials, so selected and proportioned that the resulting product would compare favorably with meat. Meat is recognized as an excellent dietary source of protein (1), of the vitamins of the B complex (2), and of the minerals, iron and phosphorus. Accordingly, an extender was developed from a mixture of food products rich in high quality protein, in the vitamins of the B complex, and in the essential minerals. The formulation depended not only on the nutritional qualities of the ingredients but also on organoleptic properties of the cooked extended meat products. The planned extender was composed of: soya grits (defatted and precooked); whole cereals (oats and wheat); corn and wheat germ (defatted); brewers' yeast (including yeast hydrolysate); dry skim milk; and spices, etc. The protein of the mix was derived 36, 21, 21, 14, 7, and 1 per cent from the above ingredients respectively.

In the present study meat cakes were prepared from mixes made without any extender, with the planned extender, and with bread crumbs. In the last case the bread crumbs employed were of the best quality available on the open market, the bread having been enriched with thiamin, niacin, iron, and milk solids. The raw and cooked products were subjected to proximate analyses, tests for essential amino acid content, and analyses for members of the vitamin B complex and the essential minerals. It was thus possible to ascertain the value of the extenders not only from the standpoint of physical extension of meat with reference to weight and volume per serving, but also with respect to the nutritional qualities of the final products. Furthermore, some information was obtained as to the retention of vitamins, minerals, and essential amino acids during cooking.

Much work has been conducted on the influence of cooking procedures upon the vitamin content of meat. These investigations have been summarized (2). With respect to the effect of cooking techniques on the essential amino acids little information is available.

EXPERIMENTAL

Preparation of Meat Cakes. The following ingredients were employed in the preparation of the meat cake containing no extenders: ground beef, 1000 gm.; Worcestershire sauce, 15 gm.; mustard, 15 gm.; ground horseradish, 15 gm.; chili sauce, 100 gm.; salt (NaCl), 15 gm. All ingredients were thoroughly mixed together in a deep bowl. In the case of the extended meat cakes, 667 gm. meat and 333 gm. extender were combined, with the seasoning ingredients in the above amounts; 500 gm. water was added to mixes containing an extender in order to compensate for the low-moisture content of both extenders (less than 10 per cent).

The raw meat cakes weighing 100 gm. were shaped into rectangular molds 10 x 5 x 2 cm. and pan-fried at medium heat in units of four. Hydrogenated fat (20 gm.) was melted in the aluminum pan for each frying run. In the center of each meat cake was a thermocouple attached to a multiple switch in circuit with a potentiometric pyrometer. In one series the meat cakes were fried for a total period of 10 minutes; in the other, 20 minutes. The samples were turned in the middle of each cooking period. By use of the potentiometric circuit it was possible to take temperature readings of the center of each meat cake at any time during the frying operation. Not less than 12 meat cakes, representing 3 or more independent runs, were prepared in each case. At the end of the frying periods the cooked products were weighed and their volumes recorded. Since it is the over-all volume which determines the size of a meat serving, measurements of the gross volume of the cooked products were made by means of volume displacement of a nonfluid medium. For this purpose a beaker graduated at the 300 cc. mark and initially filled to that mark with small (2 mm.) glass beads was employed.

Table 1 details the method of preparation and the degree of meat extension obtained. The latter may be evaluated in one of two ways, extension expressed as the increase in weight of product or as increase in volume of product per unit weight of raw meat. For these evaluations the product made without extender and fried for 10 minutes was given a rating of 1.00.

Examination of the data in Table 1 clearly demonstrates that it is possible to obtain more than 100 per cent extension of the meat by the use of extenders in the quantity indicated. This is apparent, regardless of whether the extension is expressed in terms of weight or volume increase. Practically the same degree of extension is obtained with either extender. Extension expressed in terms of volume increase is somewhat greater than the weight increments because the extended products contain more air pockets and hence their density is less than that of the control meat cakes. The decreases in weight or volume of the meat cakes under prolonged cooking are more significant in the case of the control meat cakes, due apparently to the greater capacity of the extended products to retain moisture during frying. Only the control meat cakes, made without extenders, yielded drainage fluid.

Comments on the quality of the cooked products also appear in Table 1. The incorporation of a large quantity of bread crumbs yielded an unsatisfactory meat cake with respect to taste and appearance. The product containing the planned extender compared favorably with the control meat cake, fried 10 minutes, regardless of whether the former had been fried 10 or 20 minutes. Thus the greater capacity of the mixture containing the planned extender to retain moisture permits more latitude in cooking time.

Table 2 presents the average internal temperatures of the meat cakes at periodic intervals during three or more cooking runs of 12 to 17 individual meat cakes made with each sample mixture. Whereas these figures indicate no significant differences in average cooking temperature, the individual readings at any given time varied over a range as great as 35°C. at the end of the first 5 or 10 minutes of cooking. In order to reduce the variable factor of

[1] The expenses of this study were defrayed by the Extendo Corporation, Division of Planned Foods, Inc., New York. Received for publication October 28, 1943.

[2] Cooper Road, Scarsdale, N. Y.

temperature, composites of each series of cooked samples were prepared for the purpose of analysis. Recognition of this variable has led the Wisconsin group to repeat with standardized cooking techniques (3) much of their earlier studies (2) on the retention of vitamins during the cooking of meat.

In each series the meat cakes,[3] cooked until medium well done—10 minutes (control samples and those made with the planned extender) and 20 minutes (meat cakes with bread crumbs)—were ground in a large porcelain mortar and thoroughly mixed. Aliquots of these samples as well as the basic uncooked products were then subjected to test, results of which are given in Tables 3–6. In all of these tables, to facilitate comparisons of the analytical results obtained for the cooked products all figures are expressed in terms of 100 per cent extension of the meat on the weight basis. That is, 100 gm. raw meat yields 94 gm. meat cake made with no extenders or 188 gm. of the extended meat cakes. Actually the degree of extension in every case was somewhat greater than this but the variation between products is not regarded as significant.

[3] Only the more favorable products were used for the assays.

Assay Methods. Proximate analyses were conducted according to the AOAC methods (4) for total solids, protein, fat, crude fiber, ash (moisture and carbohydrates other than crude fiber, by difference) and caloric content (calculated). Thiamin was determined by the thiochrome procedure (5); niacin (6) and iron (4) colorimetrically; riboflavin (7), pyridoxine (8), and pantothenic acid (9, 10) by microbiological assay; calcium, titrimetrically (4); and phosphorus, gravimetrically (4). The essential amino acids were estimated chemically; arginine, histidine and lysine by the Kossel-Block procedures; tyrosine and tryptophane by the Millon-Lugg methods; phenylalanine by the Kapeller-Adler procedure; cystine by both the Folin-Marenzi and Flemming-Vassel methods; methionine by the McCarthy-Sullivan procedure, threonine by the Block-Nicolet method; and leucine, isoleucine and valine by the Fromageot-Block procedures. These methods are described in detail by Block and Bolling (1).

Cystine and tyrosine are included in the above series although Rose (11) lists them among the dispensable amino acids. However, they may be important for nutrition since they partially replace methionine (11) and phenylalanine (12) under certain conditions.

Results. Table 3 presents the results of the proximate analyses of the basic ingredients and of the meat cakes made from them. The moisture content of the raw meat mix was much greater than that of the extenders. As stated above, this necessitated the addition of water to both extended meat cake mixtures in order to yield palatable products. The protein content of the raw meat mix was only slightly greater than that of the enriched bread crumbs and only one-half that of the planned extender. However, when the protein content is properly expressed in terms of total solids, the raw meat mix actually furnishes 45 per cent more protein than the planned meat extender and 210 per cent more than the enriched bread

TABLE 1

Preparation of meat cakes

SAMPLE	MEAT CAKE WITH NO EXTENDERS		MEAT CAKE CONTAINING PLANNED EXTENDERS		MEAT CAKE CONTAINING ENRICHED BREAD CRUMBS	
	A	B	A	B	A	B
	gm.	*gm.*	*gm.*	*gm.*	*gm.*	*gm.*
Ingredients						
Beef	1000	1000	667	667	667	667
Extender	0	0	333	333	333	333
Seasoning agents	160	160	160	160	160	160
Water	0	0	500	500	500	500
	min.	*min.*	*min.*	*min.*	*min.*	*min.*
Frying Time	10	20	10	20	10	20
	gm.	*gm.*	*gm.*	*gm.*	*gm.*	*gm.*
Weight of Product						
Raw	1160	1160	1660	1660	1660	1660
Cooked	940	760	1450	1370	1510	1500
Extension of meat (plain, 10 min. meat cakes = 1.00)	1.00	0.81	2.31	2.18	2.41	2.39
	cc.	*cc.*	*cc.*	*cc.*	*cc.*	*cc.*
Volume of Product						
Raw	1100	1100	1580	1580	1580	1580
Cooked	900	720	1530	1470	1650	1610
Extension of meat (plain, 10 min. meat cakes = 1.00)	1.00	0.80	2.55	2.46	2.75	2.68
Remarks on meat cakes	Good, medium-done	Dry, overdone.	Good, moist, palatable; held together well.	Good, only slightly dryer than 10 min. product.	Very poor, soggy, failed to hold together; presence of filler easily detectable by taste.	Soggy, failed to hold together, taste comparable to 10 min. product.

TABLE 2

Internal temperatures of meat cakes during frying

SAMPLE	AVERAGE INTERNAL TEMPERATURES DURING FRYING			
	After 5 min.	After 10 min.	After 15 min.	After 20 min.
	°C.	°C.	°C.	°C.
Meat cake with no extender	45	69	75	83
Meat cake containing planned extender	64	76	85	89
Meat cake containing enriched bread crumbs	50	64	82	88

crumbs. Thus, in the case of the cooked products, where moisture differences have been minimized by the addition of water to the mixes containing the extenders and where a large fraction of the protein in the extended samples is derived from meat, the meat cake without extender contained the most protein, *i.e.* 16 and 46 per cent more than those made with the planned extender and the bread crumbs, respectively.

From the results as presented in Table 4 it is apparent that the planned meat extender, as such, is far superior either to the raw meat mix or the enriched bread crumbs as a source of vitamins and minerals. Thus, the meat cakes prepared with this extender proved to be equal or superior to the "all meat" product in all factors listed (*see* Table 4). In addition to unsatisfactory appearance and taste, meat cakes made with the enriched bread

TABLE 3

Proximate analyses of the basic ingredients and meat cakes

	TOTAL SOLIDS	MOISTURE	PROTEIN	FAT	CARBOHYDRATE	CRUDE FIBER	ASH	CALORIES
	%	%	%	%	%	%	%	*per 100 gm.*
Raw meat mix	33.0	67.0	15.8	12.6	1.0	1.2	2.5	180
Planned extender	90.4	9.6	31.1	5.8	37.7	2.1	13.6	327
Enriched bread crumbs	91.6	8.4	14.3	4.7	67.4	1.4	2.8	373
Meat cake with no extenders	37.4	62.6	20.8	10.2	3.4	0.5	2.5	189
Meat cake containing planned extender and added water	49.5	50.5	17.9	13.6	11.4	1.1	5.4	240
Meat cake containing enriched bread crumbs and added water	55.6	44.4	14.3	16.0	22.8	1.1	1.4	292

TABLE 4

Vitamin and mineral analyses of the basic ingredients and meat cakes

SAMPLE	VITAMINS					MINERALS		
	Thiamin	Riboflavin	Niacin	Pyridoxine	Pantothenic Acid	Iron	Calcium	Phosphorus
	mg./100 gm.	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*
Raw meat mix	0.13	0.18	3.82	0.19	0.79	2.74	28	140
Planned extender	3.72	0.87	4.79	0.48	2.84	9.19	240	590
Enriched bread crumbs	0.30	0.17	3.25	0.10	1.22	2.99	104	180
Meat cake with no extenders	0.11	0.18	4.27	0.15	0.86	3.10	28	190
Meat cake containing planned extender and added water	0.83	0.36	4.15	0.20	1.31	4.70	93	240
Meat cake containing enriched bread crumbs and added water	0.15	0.19	3.66	0.07	0.95	2.49	57	158

TABLE 5

Essential amino acid composition of the basic ingredients and meat cakes

SAMPLE	PROTEIN CONTENT	ARGININE	CYSTINE	HISTIDINE	ISOLEUCINE	LEUCINE	LYSINE	METHIONINE	PHENYLALANINE	THREONINE	TRYPTOPHANE	TYROSINE	VALINE
	%	%	%	%	%	%	%	%	%	%	%	%	%
Raw meat mix	15.8	0.95	0.16	0.40	0.47	2.21	1.14	0.52	0.76	0.81	0.16	0.51	0.79
Planned extender	31.1	1.12	0.31	0.47	0.93	3.40	1.40	0.40	1.40	1.03	0.34	1.00	1.24
Enriched bread crumbs*	14.3	0.51	0.33	0.34	0.43	1.57	0.36	0.37	0.76	0.41	0.16	0.60	0.43
Meat cake with no extenders	20.8	1.29	0.27	0.60	0.83	2.91	1.46	0.62	1.06	1.12	0.21	0.71	1.04
Meat cake containing planned extender and added water	17.9	0.86	0.25	0.39	0.54	1.79	0.95	0.50	0.89	0.81	0.20	0.63	0.72
Meat cake containing enriched bread crumbs and added water	14.3	0.60	0.18	0.32	0.59	1.48	0.74	0.35	0.75	0.63	0.16	0.53	0.74

* The figures for the essential amino acid composition of the crumbs were calculated from the literature (1) for enriched bread crumbs made with milk solids (the latter 3% of the flour). The values for all the other products were obtained by analyses.

The vitamin and mineral analyses of the basic ingredients and the meat cakes prepared from them are given in Table 4. Even though it is yet to be determined that pyridoxine and pantothenic acid are essential for human nutrition, assays for these two factors were included. The value of these analyses resides in the fact that these two factors are too costly at present for use in indiscriminate enrichment. The assay data, therefore, serve as reliable indices of the relative amounts of the vitamin B complex naturally present.

crumbs are inferior from the nutritional standpoint to those made with the planned extender.

Table 5 gives the essential amino acid composition of the basic ingredients and the meat cakes. The planned extender contains all these amino acids in absolute amounts which, with the exception of methionine, are greater than their concentrations in the raw meat mix. However, the meat cakes containing this extender are somewhat inferior to those made with the "all-meat" formula. This is due to the addition of water to the mix containing the extender.

The bread crumbs, on an absolute basis, contained smaller quantities of 8 of the 12 amino acids than the raw meat mix. Thus, with regard to essential amino acid composition, the meat cakes prepared with the enriched bread brumbs were in general inferior to both the all-meat product and to that containing the planned extender.

DISCUSSION

Table 6 gives an evaluation of meat extenders as a source of nutrients per 100 gm. of raw meat used, when 100 per cent extension of meat on a weight basis is attained. The results are expressed not only in absolute quantities of the various nutrients supplied by the three cooked products but also in terms of the increments for the extended products after allowances had been made for factors furnished by the meat itself. In brief, 100 gm. raw meat results in a 94-gm. meat cake if made without extenders or yields 188 gm. of meat cakes with the use of extenders.

TABLE 6

Value of meat extenders in furnishing nutrients per 100 gm. raw meat used

NUTRIENTS	(a) MEAT CAKE WITH NO EXTENDERS	(b) MEAT CAKE CONTAINING PLANNED EXTENDER		(c) MEAT CAKE CONTAINING ENRICHED BREAD CRUMBS	
		Absolute	Increment over (a)	Absolute	Increment over (a)
Calories	178	451	273	549	371
	gm.	gm.	gm.	gm.	gm.
Protein	20	34	14	27	7
	mg.	mg.	mg.	mg.	mg.
Vitamins					
Thiamin	0.10	1.56	1.46	0.28	0.18
Riboflavin	0.17	0.68	0.51	0.36	0.19
Niacin	4.01	7.80	3.79	6.88	2.87
Pyridoxine	0.14	0.38	0.24	0.13	0
Pantothenic acid	0.81	2.46	1.65	1.79	0.98
	mg.	mg.	mg.	mg.	mg.
Minerals					
Calcium	26.00	175.00	149.00	107.00	81.00
Phosphorus	179.00	451.00	272.00	297.00	118.00
Iron	2.90	8.84	5.94	4.68	1.78
	gm.	gm.	gm.	gm.	gm.
Essential Amino Acids					
Arginine	1.21	1.62	0.41	1.13	0
Cystine	0.25	0.47	0.22	0.34	0.09
Histidine	0.56	0.73	0.17	0.60	0.04
Isoleucine	0.78	1.02	0.24	1.11	0.33
Leucine	2.74	3.37	0.63	2.78	0.04
Lysine	1.37	1.79	0.42	1.39	0.02
Methionine	0.58	0.94	0.36	0.66	0.08
Phenylalanine	1.00	1.67	0.67	1.41	0.41
Threonine	1.05	1.52	0.47	1.18	0.13
Tryptophane	0.20	0.38	0.18	0.30	0.10
Tyrosine	0.67	1.18	0.51	1.00	0.33
Valine	0.98	1.35	0.37	1.39	0.41

In absolute terms: 100 gm. raw meat yields a cooked product furnishing 20 gm. protein when no extenders are included in the recipe, 34 gm. protein when the planned extender is used, and 27 gm. protein when enriched bread crumbs are employed. Thus the use of the planned extender results in an additional yield of 14 gm. protein, fully twice that derived from the bread crumbs.

With respect to vitamins and minerals, the increment *per se* obtained by the use of the planned extender is nutritionally superior to the basic all-meat product, except for niacin, in which case it is slightly inferior. The meat cake made with the enriched bread crumbs yielded an increment which was superior to the all-meat product in thiamin and calcium, approximately equal in riboflavin and pantothenic acid, but inferior with respect to niacin, pyridoxine, and iron.

The nutritional value of meat most difficult to duplicate in an extender is the quality and, in terms of solids content, the quantity of protein. It is apparent that the all-meat product is superior in protein to the *increments* obtained with either extender. Only by the addition of an essentially all-protein material of high nutritional quality would it be possible to obtain an extension of the essential amino acids equivalent to the extension of the product on a weight basis. However, at present such pure proteins are not available in sufficient quantity or at a cost low enough to permit their use in meat extenders. Ten of the 12 essential amino acids are supplied in greater quantity by the use of the planned extender than by the use of bread crumbs.

TABLE 7

Evaluation of cooked products and the extensions per se in carrying their nutrient loads

NUTRIENTS	RECOMMENDED DIETARY ALLOWANCES	(a) MEAT CAKE WITH NO EXTENDERS*	(b) MEAT CAKE CONTAINING PLANNED EXTENDER*		(c) MEAT CAKE CONTAINING ENRICHED BREAD CRUMBS*	
			Whole sample	Increments over (a)	Whole sample	Increment over (a)
	%	%	%	%	%	%
Calories	3000	100	100	100	100	100
	gm.					
Protein	70	490	325	220	210	80
	mg.					
Vitamins						
Thiamin	1.8	90	580	890	85	80
Riboflavin	2.7	110	170	210	75	60
Niacin	18.0	370	290	230	210	130
Pyridoxine	1.8	130	140	150	40	0
Pantothenic acid	8.0	170	205	230	120	100
	mg.					
Minerals						
Calcium	800	55	145	205	70	80
Phosphorus	800	380	370	370	205	120
Iron	12	420	490	550	215	120
	gm.					
Essential Amino Acids						
Arginine	3.0	690	360	150	205	0
Histidine	2.1	460	230	90	155	15
Isoleucine	3.2	420	230	85	190	85
Leucine	8.1	580	280	85	190	5
Lysine	5.6	420	215	85	135	5
Methionine + cystine	3.8	370	245	170	145	35
Phenylalanine	4.3	400	260	170	180	75
Threonine	3.5	510	290	150	185	30
Tryptophane	1.2	290	210	170	135	65
Valine	4.2	400	215	95	180	80

*The values in these columns are based upon the data in Table 6.

Table 7 gives the results of calculations made to indicate how effectively the calories in the meat cakes and in the increments *per se*, as a result of the use of extenders, carry their nutrient loads. This concept of the calories in a food carrying their nutrient load is not new—it was one of the guiding principles used by the U. S. Food and Drug Administration in arriving at the standard levels for enrichment of flour and bread. According to this criterion,

a food carries its nutrient load, and hence makes a significant contribution to the dietary, when it furnishes specific nutrients in at least the same proportion as it furnishes calories; otherwise some other item in the diet must compensate for any deficiencies which may exist.

Recommended daily dietary allowances for a moderately active man (13) for many of the factors for which assays were made in the present study, are given in column 2, Table 7. Figures for pyridoxine, pantothenic acid, and phosphorus in the table are based upon analyses conducted in this laboratory and elsewhere of various dietary mixes and are considered to be as liberal as figures listed for the other factors by the National Research Council.

The recommended dietary allowances of the essential amino acids are derived from data by Block (14), who used two independent methods to arrive at these estimations: one based upon analyses of foods in the average American dietary for their essential amino acid composition; the other representing deductions drawn from Rose's studies on the rat (11). Table 8 lists the values obtained by these two independent methods of approximation, and the averages of these values which were employed as the recommended dietary allowances in the present evaluation.

Examination of the data in Table 7 indicates that each type of meat cake carries its nutrient load of protein.

TABLE 8

Recommended daily intake of the essential amino acids

AMINO ACID	BASED UPON		AVERAGE
	Studies on the rat	Food analyses	
	gm.	*gm.*	*gm.*
Arginine	1.2	4.8	3.0
Histidine	2.4	1.8	2.1
Isoleucine	3.0	3.3	3.2
Leucine	5.4	10.7	8.1
Lysine	6.0	5.1	5.6
Methionine + Cystine	3.6	4.0	3.8
Phenylalanine	4.2	4.3	4.3
Threonine	3.6	3.4	3.5
Tryptophane	1.2	1.1	1.2
Valine	4.2	4.2	4.2

When correction is made for the contribution of the meat itself so that the results are expressed in terms of the extension *per se*, the increment of planned extender carries more than twice its nutrient load of protein (220 per cent), that of bread crumbs, only 80 per cent.

With respect to vitamin and mineral content per unit calories, the increment of planned extender is superior to either the basic all-meat cake (except for niacin) or the increment of enriched bread crumbs. For this reason the meat cakes made with the planned extender are somewhat inferior to the extension itself as a source of vitamins and minerals. The all-meat cake fails to carry its nutrient load of 2 factors; the increment of bread crumbs, of 4 factors. There are insufficient overages in the meat to compensate for the deficiencies of the latter.

With respect to the essential amino acids, the added planned extender carries its nutrient load of 5 of the 10 essential amino acids and furnishes at least 85 per cent of the others. The increment of enriched bread crumbs furnishes none of the essential amino acids in satisfactory amounts. The all-meat product is, of course, more than able to carry its nutrient load of the essential amino acids. Thus, either of the whole samples containing extenders furnishes a significant excess of the essential amino acids.

The present study also furnishes some information on the fate of the various nutrients during cooking. Only in the case of the all-meat cake was there an appreciable amount of drainage. Analyses of this fluid indicated that losses of only 5, 2, and 2 per cent of thiamin, riboflavin and niacin, respectively, may occur if this material is discarded. On the average, destruction of approximately 35 per cent of the pyridoxine (according to microbiological assay) and 20 per cent of the thiamin occurred in frying. Losses of other vitamins and minerals were inappreciable, 5 per cent or less, while the essential amino acids were stable.

SUMMARY

A comparative analytical study of meat extension was carried out involving assays of the basic ingredients and of the resulting meat cakes for: proximate composition (total solids, moisture, protein, fat, carbohydrate, crude fiber, ash and caloric content); for vitamins of the B complex (thiamin, riboflavin, niacin, pyridoxine and pantothenic acid); for minerals (calcium, phosphorus, and iron); and for the essential amino acids (arginine, histidine, lysine, tyrosine, tryptophane, phenylalanine, cystine, methionine, threonine, leucine, isoleucine, and valine).

Two meat extenders, one prepared from readily available and low-cost materials of high nutritional value, the other, enriched bread crumbs, were employed in the present study, and analyses made on the basis of a 100 per cent extension of the meat by weight. The product made with the first mentioned extender compared favorably with the all-meat cake from the standpoints of cooking time, palatability, and nutritional value. The limitations in the use of bread crumbs, even of the enriched variety, for effecting a true extension of meat are demonstrated.

Only in the case of pyridoxine (vitamin B_6) and thiamin were appreciable cooking losses of vitamins noted in any of the meat cakes. No significant losses of the other vitamins, minerals, or essential amino acids occurred during cooking.

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NUTRITION TEACHING IN WARTIME[1]

ANNA DEPLANTER BOWES

Chief, Division of Nutrition, Pennsylvania Department of Health

HIGHER health levels is a goal toward which we, in company with our professional colleagues, have been continually working in war and peace. It is encouraging to realize that men and women in the armed services, and those who have been rejected for military service, undoubtedly have changed their concepts of physical fitness. Those who have been accepted for military service are daily being taught the importance of adequate diets under many different conditions and in various climates. Actually, they are participating subjects in a world-wide nutrition experiment in which the Quartermaster Corps and the Army dietitians are teaching nutrition in a most convincing and vital manner. In my many conversations with servicemen and women during the past two years I have noted a keen respect for food and its place in their daily program. The term "chow" is not used. It seems to belong to World War I when teachings emphasized other phases of food. Many hours have been spent in attempts to awaken a similar awareness of the importance of food in everyday life as well as a tool of production, among civilians with whom we work.

In England where communal feeding methods have been used extensively, the civilian population has been taught a great deal about nutrition through actual participation in this type of mass feeding. Lord Woolton, in working out the dietary pattern for "Britain Eats to Fight," has truly been a teacher of nutrition. Our British allies have had very practical food demonstrations and, according to health statistics, very satisfactory results from their changed dietary habits.

THE SCHOOL LUNCH AND NUTRITION TEACHING

On the home front, school lunches likewise provide many opportunities on a national scale to help young Americans appreciate better nutrition and to become acquainted with new foods, and to learn the importance of an adequate diet by eating a full third or more of their day's requirement at school. While the problems of securing more adequate school lunches for all our children are not new, wartime food conditions and rationing make greater attention to these problems a serious responsibility of school and public health authorities. This responsibility will increase as more mothers join the ranks of industrial workers and have less time for preparing food for the family. Statistics show that in 1942, 14.1 million women were employed, a figure which in July 1943 was increased to 17.1 million (1), many of whom were mothers of school age children. Because of the increasing importance of school lunches, many states through their departments of public instruction have already secured or are seeking state supervisors of school lunches. This is one way of unifying efforts at the state level and giving all schools more help, especially in communities which are adjusting with difficulty to the withdrawal of WPA workers.

A report on "More School Lunches" in the New York *Times*, September 26, 1943, is heartening evidence of the way in which a large city is meeting important wartime problems.

For the first time the city school lunch program, initiated as far back as 1930, covers all the children who need it, regardless of their parents' income. If parents have less than $26 a week to support three persons, lunch will be free; otherwise it will cost only 5, 10 or 15 cents, depending on the family income. The purpose is to assure proper nutrition despite wartime shortages. Jimmie and Susie are entitled to the meal if their home food budget is low, if their mothers work, if they live far from school, or simply if their principal declares they will benefit by it.

When the expanded school lunch program gets into full swing during the next few weeks, 60,000 to 65,000 meals will be served daily in more than 700 public and parochial schools from Far Rockaway to the Bronx.

It is hoped that many more localities can report as commendable a plan as this. Providing the right kind of lunch for children who otherwise might not receive it is good nutrition practice and teaching.

Children who produced food in their school gardens and preserved it for use in their school lunches have had another valuable lesson in nutrition. To help plant a garden and to see that each vegetable and fruit is given the right kind of plant food to reach maturity, encourage in both children and adults very respectful attitudes toward food. That their own bodies have need of nitrogen, calcium, and phosphorus can be more readily understood when individuals have produced better crops by actually putting these elements into the soil. The classroom lessons in nutrition can be made more dynamic following student participation in school gardens and canning.

If soybeans, or turnip and mustard greens, are first introduced in a locality through the school or family garden their role in wartime nutrition is more easily accepted—likewise the dishes in which these appear later in school lunches or on the family table.

The provision of well-balanced lunches, and pupil and teacher participation in growing, preparing, or serving the food according to locality and circumstances, are undoubtedly the most effective means by which school lunches can improve nutrition. For dietitians well know that it is not what is taught about nutrition but what actually gets into the digestive tract and body cells that has the most direct effect on the health of an individual.

VICTORY GARDENS AS WARTIME TEACHERS OF NUTRITION

Just as children's attitudes toward food in general and particular can be changed by what they actually did in the school garden and what they saw happening there, so adults have been learning many fundamental nutrition facts in their millions of 1943 victory gardens. Soil examination is a form of determining physical fitness for plants. Treatment of the soil with the proper fertilizer is good nutrition for plants. Balancing soil conditioning with time of planting, sun and shade, water and insecticides, necessary for proper development and maturity, is health education with vital meaning.

Picking each vegetable and fruit in its prime, when its flavor, aroma, and color will best enhance the daily meal, is a practical means of immediately applying nutrition facts gained through research over several decades. So also are freezing, canning, drying, preserving, pickling, and outdoor pit storage of food grown in the family garden.

All victory gardeners, their families, and their friends have been learning valuable nutrition lessons—ones they will never forget. Moreover, they have been alert for sources of information on food production and preservation. Garden classes were the best-attended lectures in my community. Requests for federal and state bulletins, demonstrations, films, and centers for food preservation have reached an all-time high. Never before have the magazines, newspapers, and radio devoted so much space or time to a single wartime nutrition project. In our teaching over the coming months we shall be wise if we capitalize on the current, and therefore vivid, nutritional successes or failures of victory gardeners. It is our task

[1]Presented before the American Dietetic Association, Pittsburgh, October 20, 1943.

to translate these events in terms of nutritional failure or success. Good teachers, like generals, are strategists and will make the most of this opportunity.

NUTRITION AND INDUSTRY

We know that increased production of armaments will save lives by shortening the war, which means that each worker must be operating at his full productive capacity. Recent surveys on food habits of industrial workers by Goodhart (2) and Turlay (3) show that present eating practices are not a good foundation for preventing illness and speeding production. Of 552 workers interviewed in one of the California plants, 61 had eaten no breakfasts. In evaluating the breakfasts of those who routinely ate this meal, 63.9 per cent were rated poor; 21.9 per cent, fair; and 14.2 per cent, good. An investigation of the kind of lunches eaten by 176,000 shipyard workers revealed that less than 9 per cent were able to obtain any kind of food within the shipyards. "At Richmond yard #3, the only food dispensary for 25,000 workers is one small wagon outside the gates—and workers are not permitted to leave the yard at the noon hour! At Richmond yard #4, there are no eating facilities at all for 25,000 workers." The study of the lunches these workers carried, with one exception, showed moderate to gross inadequacies with respect to thiamin, vitamin A, riboflavin, calcium, and protein.

The Committee on Nutrition in Industry of the Alameda County Nutrition Council is to be congratulated on the constructive suggestions given the commercial companies who had prepared the lunches. Surveys mean little in improving nutrition, of course, unless the undesirable facts revealed are remedied. Turlay's summary of the factors which were found to be delaying in-plant feeding programs, so desirable for the health of workers, is also helpful. She enumerates these as follows: Uncertainty about food distribution to new factory cafeterias, actual food shortages, difficulties in securing adequate equipment, labor shortages, unwillingness of management to admit that production would increase and absenteeism decrease if workers were better fed.

The conditions described are in general akin to those which are preventing management in other areas from operating their own cafeterias. The first step in solving any serious problem is to determine the causes. Elimination of remediable causes through concerted action on the part of local, state, and federal groups can then proceed. Every nutritionist and dietitian recognizes that one of the most serious nutrition tasks in her state is to improve the diet of industrial workers. Every resource the community can assemble, and that county and state nutrition councils and state departments of health through their various divisions can contribute, should be utilized.

The Health-for-Victory Clubs and other excellent demonstrations that have been given by home economists associated with utility companies have provided stimulating and helpful suggestions to the wives of workers. A recent report on the Health-for-Victory Club meetings for eastern Pennsylvania showed that 24 clubs representing 71,010 employees in 18 cities had an average monthly attendance of 5260 women. The monthly distribution of the "Meal Planning Guide," published by the Westinghouse Electric & Manufacturing Company, was 11,650 copies. In this same area 68 additional companies with 52,008 employees in 35 different cities were distributing monthly 30,658 copies of the Guide to their employees. Thousands of earnest homemakers are being taught the importance of the right kind of meals, three times a day, for industrial workers, and especially how to make the packed lunch a better one. As many of these wives may also be working in plants, the knowledge they have gained will be spread among their fellow workers by conversation and example.

NUTRITION OF THOSE OVER FIFTY

Large numbers of the new recruits for industry and other occupations will be drawn from the age group over fifty. We have heard that "life begins at forty." Those of us who have had a chance to test this theory know that the forties do *not* bring increased resistance to fatigue, nerve strain, accidents, and infection—conditions common among industrial workers.

As older men and women take up their war jobs, safeguarding their health becomes doubly important. Tuohy (4) says, "The competence of healthy, older people is largely a matter of nutrition." Too little food and especially too low an intake of protein, thiamin, and riboflavin, as well as calcium and iron, are characteristic dietary deficiencies of many older people. In all our teaching and writing, maintaining health and vitality of that portion of our population past forty is important wartime teaching.

Dietary deficiencies often occur because of needed or poorly fitting dentures. With increased income better mastication facilities can be obtained. Suggestions for preparing foods which are relatively easy to masticate and high in nutritional value are pertinent. The recent pamphlet, "Eating for Health in Later Life," distributed by the Evaporated Milk Association, Chicago 1, is very useful for the busy nutritionist and dietitian as well as the lay public for whom it was written.

NUTRITION OF THE NEXT GENERATION

Our accelerated national birth rate offers another insistent and continuing claim on nutritionists and dietitians. Thousands of war brides on small incomes, often with no homes of their own, are facing the hazards of maternity alone, with only the vitality, courage and hopefulness of youth as conditions favorable for pregnancy. To offset this, all pertinent nutrition information should be made easily available to expectant mothers, for they are eager to have healthy babies. Nutrition teaching when given, therefore, is generally applied. Every state department of health now has thousands of wives of servicemen registering for maternity care, providing excellent opportunity to give these mothers sound nutrition advice concerning themselves and their babies. Here is an unparalleled chance to help build a stronger America. The sons and daughters of those who are "expendable" deserve all that the science of nutrition has to offer. The nutrition research of Ebbs and co-workers (5), Williams and Fralin (6), and Burke and co-workers (7), indicates that adequate diet during pregnancy can help reduce maternal morbidity, duration of labor, prematurity, and illness of infants during the first year of life.

TOOLS FOR THE JOB

Mention has already been made of the *receptivity* of large and varied groups of our population toward anything that will "help the war effort." The National Nutrition Program has provided constant and excellent publicity. Magazines, newspapers, and radio have given unstinted space. Food producers and others and the Federal Government bureaus have prepared and distributed quantities of literature. Food demonstrations, exhibits, and menu contests for good meals under rationing

have met many needs and served to stimulate interest through providing specific, emotional appeal as well as practical information. Psychologists affirm that all these are desirable in influencing attitudes and behavior.

Rationing, too, necessitates planning for food conservation and prevention of waste, as well as changes in food habits. The spirit of "playing the game" and an aroused sense of patriotism should motivate a graceful acceptance, but these attitudes may need encouragement.

Graphic materials, simply portrayed and easily understood, are doubly important in wartime teaching. More than ever people are in a hurry, fatigued from longer work hours and easily distracted mentally. "Let him who runs catch your message or your enthusiasm," is a good watchword. Some of the materials developed and used successfully in Pennsylvania are simple food value charts and plans for exhibits (8).

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Nutrition Exhibits in Wartime. Prepared by Division of Nutrition, Pennsylvania Department of Health, Sept. 1943. Free copies available from Nutrition and Food Conservation Branch, FDA, U. S. Dept. of Agric., Washington.

Diet for Blood Donors

The Division of Nutrition, Bureau of Maternal and Child Health, Pennsylvania Department of Health, Harrisburg, has published a new leaflet intended to encourage donations to the blood bank and emphasizing the importance of eating the right foods before and after donations are made. The introduction explains why good diets are important and lists the groups most vulnerable to anemia.

Included in the leaflet is the following information: food sources of iron, in average servings; amounts of iron needed daily by adults, children, and pregnant and lactating women; two days' menus illustrating well-balanced, adequate meals rich in iron and other nutrients; and an analysis of the meals in the menus. In conclusion, the following *musts* for blood donors are listed: "(1) Immediately following the donation use plenty of stimulating liquids. One or two cups of hot cocoa are excellent. If not available, take coffee, hot milk with coffee or other flavoring, bouillon or consommé. (2) An abundance of iron and copper-rich foods in your meals. (3) Generous amounts of protein-packed meat, fish, milk, eggs, cheese, beans—especially soybeans. Eat liver or kidney two or more times a week. (4) Vitamin-valuable citrus fruits, tomatoes, tomato juice, cole slaw and potatoes for vitamin C. (5) Soybeans, pork, ham, whole grain or enriched cereals and breads for vitamins of the B complex. (6) Regular, well-balanced meals, adequate in all other essentials."

According to Mrs. Anna dePlanter Bowes, chief, Division of Nutrition, single copies of the leaflet will be sent to A.D.A. members on application to her.

OPA Price Lists Program

A program designed to encourage housewives to check the published ceiling prices when they shop and thereby help to control food prices has been set up by OPA. The program, as outlined in a communication received from Calla Van Syckle, Consumer Division, OPA, includes the following features: (1) Provision by OPA of printed price lists, identical with those posted in grocery stores, for distribution through War Price and Rationing Boards to anyone requesting them, and for posting in libraries, clinics, settlement houses, and other community centers. (2) Publicity concerning the availability of these lists through newspapers and other publications and the radio, as well as in advertising, posters, etc. (3) An educational program directed to the retail trade emphasizing the advantages of displaying price lists where they can be easily read. (4) An educational program for shoppers.

Group Services Bulletin No. 7, released February 15, is devoted to the price lists program. It includes background material on price control and, in general, serves as a guide for leaders who may wish to explain the use of price lists. Other materials prepared by the Consumer Division to implement the program include the following: a poster, "New Ceiling Price Lists Are Here," and an instruction sheet, "How to Use the Food Price Lists Effectively," for distribution to libraries and other centers where lists are to be available; a bookmark, "How to Help Fight Inflation," telling where price lists may be obtained and how to use them and report violations, to be distributed to libraries for insertion in books borrowed during the first week in March; a leaflet with price control information on one side and directions for shopping with ration tokens on the other, to be given out with price lists by the War Price and Rationing Boards. National organizations have been asked to carry articles concerning the program in their official publications, and special materials are being sent to schools and colleges for use in promoting the educational program.

Editorial

GREEK FOOD HABITS

Interesting information about the food patterns of the Greek people both in Europe and in this country, prepared by Natalie F. Joffe, Committee on Food Habits, National Research Council, was presented at a meeting conducted by the Common Council for American Unity in New York, January 10. Miss Joffe and others of the Central Action Committee, including Josephine Adams and Lillian Anderson, members of the American Dietetic Association, and Mrs. Gertrude Gates Mudge checked the statements and recipes furnished by women of Greek background from the point of view of nutritional value.

According to the information thus assembled it was concluded that in normal times the eating habits of the Greek people are such that a good diet is provided. While there are many typically national dishes, except on festive occasions only one or two are used at each meal. Bread is the most important single food and like most other Europeans the Greeks consider this not merely an adjunct to a meal, but truly the staff of life.

The main meal in Greece is in the early afternoon. Supper consists largely of the same foods which have been cooked (sufficient for the midday and evening meal) earlier in the day. Bread, a stew or casserole dish, olives, fruit, nuts, cheese, and wine are fairly typical components of the dinner menu.

Since the climate of Greece permits several crops a year, fresh food is always available but in general there is a scarcity of meat. Like many other peoples of the eastern Mediterranean area, the Greeks do not like pork and little of it is eaten except on some of the islands. The Greeks of Asia Minor use more butter than those on the mainland and correspondingly less oil.

Cooking is done on small charcoal stoves without ovens. All bread is baked at the big oven in the village bakery. In the cities it is usual to buy the bread or to send it out to be baked. Owing to the absence of ovens in the homes, meat is grilled or roasted out of doors and casserole dishes and stews are cooked on top of the stove. Most Greek main dishes begin with the cooking of onions in oil, after which the other ingredients are added. Herbs are used in great variety to give a delicate nuance of flavor to each dish.

There are two 40-day fasts a year—before Easter and before Christmas. During these and on other fast days no meat or butter may be eaten; instead, fish, olives and their oil, vegetable stews, and casserole dishes are consumed.

After the United States entered the war, the Greeks in this country were not able to obtain the imported olives and olive oil and the cheeses made from the milk of goats and sheep to which they were accustomed. They have, however, learned to use California olive oil, or other oils with a small amount (about 10 or 15 per cent) of olive oil to give the desired color and flavor. Oven cooking of casserole dishes permits the use of less oil and, at the same time, the retention of the characteristic flavor and texture of the dishes to which they have been accustomed. The fermented milk, *yaurti*, which in Greece is made from goat and sheep's milk, can be made, it is said, from pasteurized cow's milk and is relatively simple to prepare at home. Vine leaves, served with a stuffing of cooked cereal, chopped onion, parsley, dill, and sometimes a little meat, are now preserved in brine in casks or crocks at home as a substitute for the imported canned leaves. Brazil nuts, cut into small pieces, are proving satisfactory to replace the pignolia nuts, traditionally an important ingredient for *pilavi* (a type of casserole dish). Split shredded wheat biscuits, prepared with nuts and syrup, have been found to be a satisfactory alternative to the customary Greek pastry which is time-consuming to make.

Included in the release is a luncheon menu of Greek dishes together with recipes. These include: *pichty*, a moulded dish made of dried peas, meat stock with marrow, lemon juice, and gelatin, and used as a spread for bread or in salads; chicken and *pilaf* (rice cooked in the chicken fat); *imambaidi*, eggplant cooked in a casserole with green peppers, tomatoes, leeks, and Spanish onions; and *kataif*, a pastry dessert. Recipes were also compiled for other Greek dishes, such as *yeladzi dolma* (stuffed vine leaves); stuffed tomatoes, made with "lamb hamburger"; lamb stew with artichokes; *arni-fassolokia* (lamb with string beans); *gumbo yachni* (casserole made with okra and other vegetables); *tsipoura* (broiled porgie).

The recipes are followed by a list of the Greek basic foods classified according to the National Nutrition Program's basic seven foods for good nutrition. We note that a great variety of greens is used, either cooked or in salads, also considerable citrus fruits, especially lemon, which is incorporated in salad dressing; that fruits are usually eaten raw or in preserves; that many kinds of beans unfamiliar to American housewives are used; that nuts are incorporated in cooked dishes made with grains; that both white and whole wheat loaves similar to French or Italian bread are eaten; and that not much butter is used except in baking—the olive oil, black salted olives, and oily fish supplying vitamins A and D to the diet.

The most striking characteristic of the Greek-American housewife, it appears, is her sense of thrift as evidenced by her gift for combining several ingredients in one dish so that no leftover bits are thrown away, the "stretching" of meat with vegetables and cereals, the serving of cereals in meals other than breakfast, and the popular use of fermented milk as a substitute for heavy cream.

THE PROBLEM OF CHANGING FOOD HABITS FROM THE VIEWPOINT OF CULTURAL ANTHROPOLOGY

"The Problem of Changing Food Habits" is the title of an extensive report of the Committee on Food Habits, National Research Council for 1941–43.[1] In the Introduction, M. L. Wilson, chief, Nutrition and Food Conservation Branch, FDA, congratulates Dr. Carl S. Guthe, chairman of the committee, and Dr. Margaret Mead, executive secretary, on their contritution to the wartime nutrition program in directing the committee's activities which are summarized in the report. Mr. Wilson believes that "A new science of food habits is developing. This will be a handmaid to, and of equal importance with, the biochemical science of nutrition in efforts for the prevention of disease and facilitating man's progress toward optimum health."

Readers of this JOURNAL are familiar with the studies made by Natalie F. Joffe of the food habits of certain foreign-background groups in this country. In addition to the Italian food patterns and those of some Central Europeans (*see* this JOURNAL for October 1942 and October 1943, respectively), a study of the food habits of the American Negro is now under way, the preliminary conclusions

[1] Bulletin No. 108. 2101 Constitution Avenue, Washington, 25, D. C.: Publication Office, National Research Council.

of which are incorporated in the report under review. The method by which this and the other studies were carried out, without the aid of an extensive field staff, is described; namely, the use of a volunteer collaborator of appropriate background who has had some training in the social sciences and who serves as both co-author and informant, a thorough perusal of the available literature on the subject, and interviews with specialists familiar with the field including physicians, social workers, school teachers, and newspaper editors. In testing various concentrated foods which might be used in feeding people in liberated countries, the services of trained personnel of suitable nationality background were also obtained. Such tests have been completed with two nationality groups—Greeks and Norwegians—and the reactions and suggestions carefully noted and organized for the use of relief agencies. From the point of view of the dietitian and nutritionist, this work under Miss Joffe's direction would seem to be of very practical value at the moment.

In planning for emergency feeding, consideration of supply and nutrition determines the original plan (*see* papers published in this JOURNAL for April 1943 which were presented at a Liaison Session of the Committee on Food Habits on "Feeding Liberated Countries and Nutrition Education"). Next, according to Miss Joffe, acceptability tests make possible minor alterations such as changes in color or texture. Instructions are written in foreign languages to facilitate adjusting of the standard ration to the traditional food habits of a given area.

Information concerning the food habits of the people of China was provided by Dr. Gwei-Djen Lu, College of Physicians and Surgeons, Columbia University, at a conference on "Problems of Food Supply, Food Habits and Nutrition in China." Each of the three sections of China presents its own particular problems. The West, or Free China, used to be a rice-eating region, but because of the influx of people from other sections it is now a region with mixed food habits, and it is believed that here no serious food deficiencies were prevalent up to 1937. It is considered, as a matter of fact, the most fertile country in China. In the North, wheat and maize are the staple foods. Millet and *kao-liang* (grain-sorghum) are also used, as well as soybean products.

One of the greatest difficulties in getting sufficient vitamin B into the diet in the South is that the people cannot or will not eat whole rice. It takes three times as long to cook, does not appeal to the palate, is said to cause discomfort, and to be incompletely utilized. The rice could be ground to overcome some of these disadvantages but adults are accustomed to using rice in grain form. A ground rice paste in which the vitamins are preserved by fractional sterilization, and to which the juice from cooked greens is added, was developed for babies who will eat it "if they have known nothing else." When a baby is four months old, egg yolk is added to furnish more nutrients, and in some cases cod liver oil.

Dr. Lu's suggested solution of the rice problem is that the whole rice be stored in its natural form and partially milled only very shortly before needed.

Among the products which will be needed in China are rice, wheat, peanuts, soybeans; butter, milk, or other animal proteins, *e.g.* eggs and fish products, including fish meal. Of these needed products, the rice supply in this country (the United States) is comparatively low, while fish meal is used only for fertilizers since the process of making it has not been sufficiently perfected for human consumption. Bone meal is also used as a food in China and might conceivably be furnished by this country.

White flour, which has been sent to China in the past, has a higher prestige and is more acceptable than dark varieties. Enriched white flour has little advantage over unenriched since Chinese methods of cooking noodles and pastes (for which flour is chiefly used) involve discarding the liquid in which they were boiled.

Studies of the food habits of various rural groups in the United States were undertaken by Margaret T. Cussler and Mary L. de Give, Radcliffe College. These included: (1) A sociological study of a Coastal Plain tobacco community involving analyses of factors such as economy, food production, storage, distribution, health, and education in relation to nutritional status of the community, and a follow-up study a year later to ascertain changes in food practices and attitudes with particular reference to the National Nutrition Program. (2) A reconnaissance study of a "live-at-home" community with a Swiss-German (Pennsylvania Dutch) cultural tradition. (3) A 6-week test program to discover the relative effectiveness of various media in a county nutrition program in Georgia. These studies, made during 1940–42, revealed why the effectiveness of a nutrition campaign in the rural Southeast might be expected to be hampered by local customs and beliefs. For example, in the Coastal Plain tobacco community, "Relatively few of the people were securing scientific nutrition information since radios, newspapers, magazines, and clubs were reaching only a third of the rural population. No government nutrition programs were affecting all the people in 1941. There is still both a very serious milk deficiency and a dislike for milk and dairying. Enriched flour was neither asked for by the rural people nor available in the local stores." A report of the second project, entitled "Home-Grown Food and Homely Virtues," is available from the Nutrition Division, Federal Security Agency, Washington. As to the county nutrition program in Georgia:

> At present a cash crop (tobacco or cotton) economy seems to impede good nutrition in the South. Landlord-tenant relations affect nutrition for good or ill, depending upon their individual character. . . . The authoritarian type of southern family enhances the influence of the parents, particularly the mother, in the formation of food habits. . . . Neighborhood relations have significance for nutrition, both in patterning the lines of communication between residents through which nutrition information may diffuse and in patterning the distribution of the actual means of good nutrition, such as giving away of surpluses, lending of equipment, offering of services, etc. Decided preferences were found here. Particular cultural concepts governing proper foods for persons in different circumstances of health, age, sex, etc. were found. Professional nutritionists in various agencies, both government and educational, in a rural county, contact for the most part only the white owner and long-term sharecropper classes, but their influence in exchanging the traditional foodways for uniform national foodways is increasing. The relations with the doctor, the country storekeeper, and urban people are also becoming ever more influential in changing the regional foodways. There are two main lines of communication operating in a rural southeastern community: the horizontal class contacts, for example, between white owners and other white owners, and the plantation contacts in which the line of communication extends vertically among the landlord, tenants, sharecroppers and wage-hands of a single establishment. Each type of communication is important for the diffusion of knowledge and techniques of good nutrition.

Certain social distinctions which were brought to light are interesting—for example, the attitude that the Negroes need less food than the whites, that certain foods are light and others heavy, that some have greater prestige and others less, the reasons for which were not apparent to the investigators nor to the informants themselves. Regional preferences included foods which are rare, store-bought, packaged, canned, light-colored, processed, refined, and changed in appearance.

Another study which was summarized in the report was that of federal employee turn-over in Washington with special attention to living habits, based on interviews with women employees. It was discovered that the typical daily diet was outstandingly deficient in milk and eggs

and to a lesser degree in other food categories. On the other hand, meat is eaten generally twice a day. Suggestions for correcting these "faulty food habits" include use of attractive substitute dishes for meat, equalizing the cost of milk and coffee, and making it possible for workers to lunch with their friends.

The food habits of war workers were also studied, and recommendations made.

At a meeting devoted to the subject of the "Impact of the War on Local Food Habits" in March 1943, a series of papers was presented by "individuals in advantageous positions to observe the changes in food habits of selected groups":

> The reports illustrated clearly the fact that food habits are not a question merely of individual behavior, but respond to the impact of an enormous number of changing situations. Most obvious is the change in the amount of food available. . . . In addition to the change in food supply, there are decreases in food services. . . . Alterations in the price structure and shifts in the economic level account for some changes. . . . The attitudes toward the changes taking place will determine whether the changes are likely to become permanent or will be considered only temporary, to be discarded as soon as the war is over. A study in the Chicago area showed that the reactions of people to rationing, scarcity, and shortages are determined to a great degree by their general attitudes toward the war; those with a midwestern type of isolationism are likely to be against rationing.
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> In . . . . other areas, people are relying on rationing to solve the problems of shortages; they think of it as a means of equal distribution and of ensuring enough for all, not as a conservation measure. Changes in the frames of reference of some people were reported, a shift in prestige from expensive items to those dietetically valuable, and an increased emphasis upon husbands' diets and needs as hard-working men, with differential rationing suggested. On the other hand, the rigidity of thinking in regard to meal patterns was shown by the attitude on the West Coast that "luncheon meats" were not a substitute for meat and by the general resistance in the Seattle area to discussion of "substitutes." In Seattle, they preferred to think that they were making choices and were confident they could take care of themselves.

Summaries of many other studies made specifically for the committee were included in the report, such as that on "Adjustment to Dietary Changes in Various Somatic Disorders," by Drs. Hilde Bruch and Marjorie Janis; "A Study of the Use of the Friendship Pattern in Nutrition Education," by Earl L. Koos; "Forces Behind Food Habits and Methods of Change," by Dr. Kurt Lewin; and "Social Process and Dietary Change," by Drs. Herbert Passin and John W. Bennett. These, as well as the work of others, are referred to by Dr. Mead in the final paragraphs of her comprehensive statement of the problem of changing food habits, as follows:

> Types of community organization most appropriate for the dissemination of information about food have an important bearing on the wartime adjustment to food conditions and so the problem has been raised as to the relative efficiency of different forms. The study made by Mr. Koos at Cornell University Medical College in 1942 suggested that lines of friendship were not the best lines for the diffusion of nutrition information, and this finding was confirmed by the studies of Cussler and de Give. This resistance may be systematically related to the phrasing of changes of food habits in moral terms and the objection to the exploitation of pleasant friendship relationships to pass on morally sanctioned information. The study of Passin *et al.* also showed that exchange of recipes for festive dishes was the only food content of personal relationships in the southern Illinois community which they studied. While the block plan, which invests a neighbor with a government sanction of patriotism and patriotic license for intrusion into domestic affairs, is probably more suitable than friendship lines, here also nutrition information can be discussed more efficiently if the emphasis is upon adjustment of meals to wartime conditions rather than upon eating correctly, upon helping a woman to adjust a process rather than urging her to be good. The neighborhood and block leader may show almost as much resistance to passing on information to her neighbors as she does to passing on information to her friends if that information is cast in terms which suggest that she is trying to reform her neighbor. If, on the other hand, nutrition information comes as news of ways in which food shortages or food shifts can be dealt with efficiently, such information will be passed on much more willingly and effectively.
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> During the entire war and immediate postwar period it will be necessary to implement two tasks: to devise ways in which the health of the people may be maintained by the most skilful use of the existing food supplies; to present an increased utilization of knowledge of nutrition in such a way that it does not become associated with the wartime period of deprivation, to be rejected later. The long-time task is to alter American food habits so that they are based upon tradition which embodies science and to do so in such a way that food habits at any period are sufficiently flexible to yield readily to new scientific findings. In order to accomplish this goal, the food habits of the future will have to be sanctioned not by authoritarian statements which breed rigid conformity rather than intelligent flexibility, but by a sense of responsibility on the part of those who plan meals for others to eat. At the same time it will be necessary to invent channels through which new findings can be readily translated into the meal planning of the woman on the farm, in the village, and in the city. To devise such a system of education, communication, and change which will link the daily habits of the people to the insight of the laboratory, and at the same time contribute to the development of a culture which produces individuals who are generally better adjusted as well as specifically better fed, is a task which requires a recognition of the total cultural equilibrium. Further, the application of science to improve eating habits may become empty and meaningless if it is not paralleled by efforts to apply science so as to increase the supply and adequate distribution of food. Efforts to better the nutrition of the world simply by altered production and distribution will also fall short of their goals unless corresponding and congruent changes are made in the patterns of consumption. The science of applied nutrition stands at the point where a variety of techniques has been developed to deal with different aspects of the problem, and the most pressing problem is the integration of all of these techniques.

Current Comment

WARTIME AND POSTWAR TRENDS IN FOOD AND NUTRITION[1]

FRANK L. GUNDERSON, PH.D., AND ROSS A. GORTNER, JR., PH.D.

Executive Secretary and Associate Executive Secretary, respectively, Food and Nutrition Board, National Research Council, Washington

The members of the American Dietetic Association have always been leaders in the application of the newer knowledge of nutrition to the feeding of people of all ages and in all states of health. It will be well if your influence can be broadened still further. Since dietetics is applied nutrition, this group can properly spearhead the innovation of better practices, and apply the many benefits accruing from the nutrition research of this generation. With a maximum of understanding of the real meaning of nourishing people in accordance with their respective needs, and a minimum of prejudices, you are fully aware of the obstacles arising from faulty food habits, but the very circumstances under which you conduct your work favor your agility in circumventing the limitations which food prejudices impose. You are realists who must provide the best possible nutrition at nominal cost, and it is in these respects that some of the newer trends are most helpful. They should be an aid not only in institution feeding but also to the millions of persons living in family units to whom limitation of cost is important.

One far-reaching and practical nutritional improvement is the increasing use of enriched flour and bread as a result of the coordinated efforts of scientists, milling and baking industries, and the Government. Food enrichment by means of vitamins and minerals was not a new idea when, in 1940, food specialists met to discuss the subject. Iodine enrichment of table salt, in fact, had long been a nationwide practice in this and other countries.

[1] Abstract of an address before the American Dietetic Association, Pittsburgh, October 19, 1943.

To formulate a program of scientifically sound and efficient use of fats, especially under wartime conditions, the evidence concerning margarine (which in this country may be voluntarily fortified with vitamin A to not less than 9000 U. S. P. units per pound) and its place in the diet has been recently reappraised by the Committee on Fats of the Food and Nutrition Board, National Research Council, and the findings have been published as Pamphlet 118 in the Reprint and Circular Series, single copies of which are available from the National Research Council on request. The report concluded as follows:

> Margarine fortified with vitamin A in accordance with food and drug regulations supplies an important amount of this nutrient as well as of much needed fat. A previous recommendation of the Food and Nutrition Board that all margarine be fortified is reaffirmed. Because of the high proportion of margarine now fortified, mandatory requirement of fortification for all margarine for table use seems unnecessary at present, though it may become desirable if the situation changes in such a manner as to reduce importantly the proportion now fortified.
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> The present available scientific evidence indicates that when fortified margarine is used in place of butter as a source of fat in a mixed diet, no nutritional differences can be observed. Although important differences can be demonstrated between different fats in special experimental diets, these differences are unimportant when a customary mixed diet is used. The above statement can only be made in respect to fortified margarine and it should be emphasized that all margarine should be fortified.
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> It is obvious that the present excise and license taxes imposed by both federal and state governments on margarine interfere with the distribution and utilization of certain of our fat resources, but the implications of these taxes are so extensive and complex that no recommendation with respect to them can be made in this report.

The definitions and standards concerning enriched flour and enriched bread were published in the *Federal Register*, July 3, 1943, and became effective October 1, 1943.[2] It is estimated that, solely on a voluntary basis, three-fourths of all flour and bread is now enriched. From a nutrition point of view, it makes no difference whether the enriching ingredients are added by the flour miller or the baker.[3] If each American eats on an average the equivalent of 6.5 oz. enriched flour in bread and other miscellaneous items per day, then by virtue of the added nutrients alone he obtains approximately 0.69 mg. *more* thiamin, 5.1 mg. *more* niacin, 0.43 mg. *more* riboflavin, and 4.08 mg. *more* iron daily than could have been obtained from unenriched flour. These amounts are of such magnitude that we may anticipate definite improvement in the nutritional status of millions of people. Table 1 shows the amounts of these nutrients in plain and enriched flour and enriched bread, and also the comparative proportions of the recommended daily dietary allowances of each nutrient which would be provided by an average daily per capita consumption of 6.5 oz. plain flour and of enriched flour. The enrichment of such basic foods as flour and bread is especially important in large group feeding because of the budgetary restrictions under which the institution must operate.

With the present short supply situation in fluid milk and dry skim milk it is fortunate that the production of riboflavin has been expanded to meet the needs for enrichment of flour and bread with this nutrient. Four southern states—South Carolina, Louisiana, Alabama, and Texas—have adopted legislation requiring that all flour be enriched according to federal standards. It seems probable that it will be only a matter of time before enriched bread will be mandatory throughout the country. In *Essentials of Nutrition* (The Macmillan Company, 1943), Sherman and Lanford voice the opinion of many nutritionists when they say that "the enrichment program offers a means of spreading the benefit of one part of the newer knowledge of nutrition with a promptness comparable to some sanitary reforms instead of by the slow process of educating every individual or family concerned."

Another phase of food and nutrition research in which progress is being made concerns protein foods. For years it has been believed that animal proteins are almost invariably superior in quality to plant proteins. But with increasing knowledge of vitamins and minerals in nutrition it is now recognized that some of the so-called differences in protein quality of animal and plant foods are really due to the vitamins and minerals rather than to the proteins themselves. Following closely on the heels of a period in which vitamin research occupied a predominant position in nutrition, the work of Dr. W. C. Rose led to a new and better understanding of protein foods. Within the last year he has found, through new and thorough tests with human subjects, that of the 10 amino acids essential to rat growth, only 8 are necessary to maintain nitrogen balance in adult humans. This research, together with other studies, may show that we need much less food nitrogen or protein.

TABLE 1

Contribution of enriched flour and bread to the American diet

	Thiamin		Riboflavin		Niacin		Iron	
	mg./lb.		*mg./lb.*		*mg./lb.*		*mg./lb.*	
Ordinary flour (white, patent)	0.3		0.15		3.5		3.0	
Whole wheat flour	2.2		0.45		26.0		17.0	
Enriched flour	2.0		1.2		16.0		13.0	
Enriched bread	1.1		0.7		10.0		8.0	
	mg.	%	*mg.*	%	*mg.*	%	*mg.*	%
Recommended daily dietary allowance (NRC), 70-kg. man, moderately active	1.8		2.7		18.0		12.0	
Enriched flour (6.5 oz. or average daily per capita consumption) provides	.81		.49		6.50		5.28	
or stated in percentage of recommended daily allowance		45		18		40		44
Ordinary flour (6.5 oz.) provides	0.12		.06		1.4		1.2	
or stated in percentage of recommended daily allowance		6		2		8		10

We must recognize that our thinking about protein requirements has been rather crude. While we have been calculating the vitamin requirement in some cases down to a fraction of a milligram, we do not know with any accuracy how much of each of the essential amino acids we need. The requirement for each of the essential amino acids needs to be measured as exactly as for the vitamins and minerals.

Opinions differ as to the amount of protein needed per person per day, varying from about 118 gm. advised by Voit about 50 years ago, to the 45 gm. suggested by Chittenden. These figures, it should be remembered, were estimated in a period when the issues were confused, especially through lack of knowledge of the vitamins. Recently, Stare and Thorn[4] have ascertained that "in the presence of sufficient calories from non-protein sources, the amount of protein in the ordinary diet of an active adult may be safely reduced to 50 gm. per day, of which as little as 5 gm. may be in the form of animal protein. The experimental evidence supporting this is limited to an 8-week

[2] *Editor's Note:* These standards appeared in this JOURNAL for August, 1943, p. 604; those for enriched bread, September, p. 656.

[3] *Editor's Note:* Another point of view in this connection appeared in *Baker's Helper*, July 17. *See* p. 786 this JOURNAL for November.

[4] Stare, F. J., and Thorn, G. W.: Some medical aspects of protein foods. Amer. J. Pub. Health 33: 1444, 1943.

observation period; however, there is no reason to suspect that it would not hold for much longer periods. The recent findings of Youmans support this view." Stare and others caution that protein-rich foods are often excellent sources of other nutrients and that any reduction in the intake of these foods must necessarily be compensated for by other foods in the dietary.

In still another important phase of protein research, Block and Bolling[5] are advancing our knowledge of the protein, or better stated, the amino acid supply in foods. Most of the earlier protein chemists of this country considered the analytical methods for measuring amino acids as applicable only to purified proteins such as casein of milk, gliadin of wheat, etc., but those figures lack practical dietetic value because people do not eat purified casein and purified gliadin; they consume milk and wheat and many other foods containing mixed proteins. The information obtained by Block and Bolling will be very useful when coordinated with the observations of Rose, Stare, D. Breese Jones, and other protein specialists.

The third nutrition trend for consideration in this report likewise concerns protein. It is, in fact, a part of the same developmental program designed more adequately to meet amino acid requirements. With increased demand for the more popular high-protein foods, meats, eggs, milk, and cheese, we are properly giving increasing consideration to broader uses of all possible sources of protein. Such staple foods as breadstuffs, macaroni-type products, breakfast foods, and so on, are being eaten in larger amounts and are thus contributing a greater fraction of the total protein intake than formerly. But there are other less common food items which can play a greater role, namely the legumes, of which the leader is the soybean; also, peanut butter, meal, and flour; food yeast; and the germ of at least two of the cereal grains—corn and wheat.

Compared to many other countries, we have made relatively little use of marine foods. According to the economists, a man-hour spent in commercial trawler fishing yields from four to ten times the amount of food resulting from a man-hour spent in hog production.

Dried brewers' yeast, as an excellent source of the vitamin B complex, has rightly received favorable recognition as a pharmaceutical and food specialty product. In addition it is about 50 per cent protein, the amino acid composition of which is of a high order. Estimates show that at the present rate of beer production the surplus dried brewers' yeast output in the country could be raised to 30 or 50 million pounds per year. From a recovery of about 10 million pounds last year the production is now rising to 20 or more million pounds for 1944. In addition, at least one large brewery and one manufacturer of baking yeast are producing several million pounds of primary culture yeast per year for food and pharmaceutical uses. As a nation we are only beginning to apply the power of fermentation, autolysis, sprouting, and so on, inherent in natural food materials.

Of particular and immediate interest to administrative dietitians are the many ways in which dried yeast or plain or autolyzed yeast extracts may be used in lieu of meat. McCay and Heller of Cornell University have prepared a summary on yeast, including recipes. They suggest that dried yeast be combined with fruit and vegetable juices, with peanut butter, and as an added ingredient in baked goods such as doughnuts, in which 1 cup of dried yeast may be incorporated with 4 of flour to produce doughnuts containing about 3 gm. yeast each. Likewise, yeast lends itself well to use in certain cakes, cookies, and muffins, according to Michigan State College Circular Bulletin 178.

In conclusion, these several major trends are of importance to the general public and perhaps even more immediately in institutional feeding. The program of enrichment of basic staple foods, particularly flour, bread, corn products and possibly rice, appears to afford one of the greatest nutrition benefits of all time to be accomplished promptly. Recent research on protein is designed to formulate amino acid requirements and to determine the amino acid content of foods to meet these requirements on a quantitative basis. A wide variety of foods of plant origin, rich in protein, including soybeans, peanuts, the germs of several of the cereal grains, and dried yeast will undoubtedly play an increasingly important role in human nutrition in the future.

[5] Block, R. J., and Bolling, D.: Nutritional opportunities with amino acids. J. Am. Dietet. A. 20:69, 1944.

HOW THE WAR MANPOWER COMMISSION OPERATES[1]

PATRICK T. FAGAN

Director, Area IX, War Manpower Commission, Pittsburgh

With this nation's entrance into the war, the need for regulations and controls to assure proper allocation of manpower between the armed forces and essential industry became apparent. The Federal Government accordingly established the War Manpower Commission, to which has been delegated the responsibility of coordinating the efforts of the various government and other agencies concerned with manpower problems so that a proper and intelligent distribution of manpower, trained or untrained, skilled or unskilled, can be made. The commission must determine the need for trained men, how and where this training should be given, and how and where labor can best provide its maximum contribution to the nation's war effort. It must establish controls that will limit the movement of workers to prevent problems of transportation, housing, or spiraling wages created by competitive bidding of employers for workers or of workers for jobs. It has no responsibility concerning the wages of workers.

At the outset, the War Manpower Commission realized that many of the activities common in time of peace must be curtailed. After due consideration of all possible implications, a list of essential activities was established, covering, it was believed, all those necessary to the nation's maximum war effort. Of particular interest to dietitians and nutritionists is Group 32, entitled "Health and Welfare Services," including offices of medical directors, offices of dentists, dental laboratories and services, research laboratories, etc. For purposes of employment, the designation of any activity as essential implies that all workers employed in this activity, regardless of their specific jobs, are pertinent to the war effort and, as essential workers, cannot be spared for some other type of employment, one not designated as essential. For Selective Service purposes, certain occupations are included as essential. For example, in Group 32 anesthetists, bacteriologists, biologists, chemists, etc. have been so designated. It should be understood that inclusion of these occupations under "essential" does not mean automatic deferment; but that such activities represent the highest level of technical, professional, or industrial skill, and that withdrawal of workers so trained might have serious implications in connection with the health, welfare, safety, or production of the nation.

For the purposes of the Manpower Commission, the country has been divided into regions and, in turn, into areas. Each area is made up of a logical labor market section. For example, our local area is comprised of Pittsburgh proper and sections adjoining the city from which workers travel to their jobs in Pittsburgh, or vice

[1] Presented before the American Dietetic Association, Pittsburgh, October 20, 1943.

versa. Each Area Director is guided by an Area Labor Management Committee composed of four or more officials of important industrial concerns and four or more top-ranking labor officials. This committee is fully cognizant of the area's problems, of its peculiarities with respect to transportation or topography, of workers' habits, and of hiring practices.

The War Manpower Commission determines the policies by which the U. S. Employment Service recruits workers. It places such restrictions as are deemed necessary properly to control the flow of workers from one area to another, the utilization of workers' skills, and the placing of minority groups. It endeavors to solve the problems of absenteeism, hoarding of workers, and poor utilization of present staffs. Some of its accomplishments, in a comparatively short time, have been noteworthy. In an effort to reduce labor turn-over and to prevent or minimize wasteful shopping for jobs, a program known as the Employment Stabilization Program was adopted in each area. Locally, the program requires that any worker who within the past 60 days has been employed in an essential activity must obtain a "statement of availability" before he may leave his present job to seek another. This statement may be obtained only in certain situations—when a worker is giving less than full time to his present job, when he possesses a skill higher than that at present being utilized, when an insolvable problem of transportation or substandard working conditions exist, when the worker's health is endangered or when some other pertinent personal reason requires his transfer. This program is administered by the U. S. Employment Service and, although exact figures cannot be obtained, practical proof exists that turnover has been materially reduced. Fewer workers are leaving jobs for reasons that in peacetime are valid and acceptable. It is a tribute to the character of American employers and employees alike that the vast majority are accepting the limitations of this restrictive stabilization program without complaint. In this area, the employees of hospitals, laboratories, asylums, etc. are completely covered by the stabilization program and, as such, may not move from their present jobs unless some valid reason exists.

The utilization of available manpower is a problem which falls within the scope of the War Manpower Commission. Employers are urged to use women workers in increasing numbers, to employ and integrate into their operations workers who are members of minority groups, to review the jobs within their organizations with an eye to utilizing the capacities of the over-aged or disabled, to utilize completely the skills of their present workers and to refrain, in their hiring practices, from any activity that might lead to an unsettled, migratory, or unbalanced labor market. Before an employer can go beyond his local area to recruit workers, a request must be channeled through the U. S. Employment Service which determines whether the employer has exhausted all local sources of supply and is fully utilizing his present staff and any available women workers in all possible capacities. This restraining procedure in many instances has prevented employers from moving into adjacent areas to recruit workers, thus complicating the problem of housing and transportation. In a further attempt to ensure complete utilization of available local workers, the War Manpower Commission has designated areas according to present and anticipated labor supply and demand as follows: An area in which a labor shortage exists and in which all possible sources of labor supply are being adequately utilized is called a Group I area and is subject to certain restrictions. No worker may leave the area; all workers must be hired through the U. S. Employment Service, etc. The Pittsburgh area, falling in Group II, is one in which a shortage is anticipated within the next 6 months. A Group III area is one in which a supply is available to meet all anticipated local needs. A Group IV area is one in which there is a surplus of labor beyond all anticipated local needs.

The War Manpower Commission has introduced the 48-hour week as a mandatory minimum for employees in a Group I area where a shortage of manpower exists.

The services of technicians and industrial engineers are available through the auspices of the War Manpower Commission to employers who are confronted with manpower utilization problems, such as the minimum number of employees required for a specific job.

In a further effort to minimize the movement of workers from one area to another, limitations regarding advertising have been suggested by the Commission and accepted by the newspapers. An out-of-area employer cannot advertise for workers unless he has received clearance from the office of the U. S. Employment Service serving the area in which he desires to publicize his need for workers.

Through its constituent agencies, the War Manpower Commission can authorize training programs for whatever types of workers it feels are needed within its area. The Training Within Industry Division is qualified and ready to conduct training for supervisors so that better methods of job instruction may be used by key personnel. We understand that this type of training is available to dietitians.

In summary, the objectives of the War Manpower Commission are to achieve the most effective mobilization of manpower for the armed forces and for the maintenance of necessary war and civilian activities, to ensure the most effective utilization of manpower by essential establishments, and to eliminate waste of manpower due to disruptive recruitment and undue migration of labor.

NUMERICAL REPRESENTATION FOR AFFILIATED STATE ASSOCIATIONS

KATHERINE MITCHELL JOHNSON

Proposed revisions to the Constitution of the American Dietetic Association include a plan which will make the House of Delegates the legislative body. If this plan is adopted, an annual session of the House of Delegates will take the place of the annual Business Meeting, and delegates representing the whole membership will assume all legislative responsibilities of the Association.

The advantages of this type of organization were discussed in the May 1943 issue of *The A. D. A. Courier* and the June and July 1943 issues of this JOURNAL. The plan provides for numerical representation. At present each affiliated state association, no matter what the membership totals, has but one official delegate; the proposed revisions would allow each affiliated state association one delegate, *plus* an additional delegate for each 50 active members. If the revisions are adopted, it is important, of course, that every affiliated state association have its full representation, which means that every active member of the national Association residing within a state should also be an active member of the state organization.

At the 1943 meeting of the House of Delegates the accompanying tabulation was shown and, at the request of that body, is reproduced in this JOURNAL. In the first column the affiliated state (and District of Columbia) associations are indicated by asterisks, 39 in all. (States are grouped geographically, instead of in alphabetical order.) The 10 states not so indicated have no state association or are as yet unaffiliated. Members of the national Association (157 in all) residing in these states should exert every effort to organize state dietetic associations, since if the proposed revisions are accepted members

can be represented only through their state delegates. A member who does not belong to a state association, in turn, would have no part in the shaping of Association policies.

The second column gives the total membership of each affiliated state association, and the third column shows the number of delegates to which the state association would be entitled under the proposed constitutional revisions.

The fourth column gives the number of A. D. A. members residing in each state; the last column, the number of delegates to which an affiliated state association would be entitled, under the terms of the proposed revisions, if *every* member of the national Association within the state belonged to the state dietetic association.

Actual and potential representation of states in House of Delegates, A. D. A., under proposed constitutional revisions

State	State Assn. Members	Number of Delegates	A. D. A. Members	Potential Number of Delegates
Maine			17	
*New Hampshire	20	1	27	1
Vermont			11	
*Massachusetts	119	3	244	5
*Rhode Island	12	1	28	1
*Connecticut	54	2	90	2
*New York	189	4	616	13
*New Jersey	42	1	127	3
*Pennsylvania	189	4	375	8
*Delaware	14	1	17	1
*Maryland	68	2	148	3
*District of Columbia	55	2	93	2
*Virginia	49	1	132	3
*West Virginia	12	1	27	1
*North Carolina	45	1	98	2
*South Carolina	21	1	38	1
*Georgia	33	1	87	2
*Florida	41	1	92	2
*Ohio	119	3	333	7
*Indiana	29	1	124	3
*Illinois	142	3	426	9
*Michigan	99	2	238	5
*Wisconsin	71	2	146	3
*Kentucky	31	1	72	2
*Tennessee	69	2	69	2
*Alabama	18	1	45	1
Mississippi			33	
*Minnesota	69	2	150	4
*Iowa	28	1	115	3
*Missouri	64	2	135	3
North Dakota			17	
South Dakota			10	
*Nebraska	15	1	53	2
*Kansas	36	1	96	2
Arkansas			26	
*Louisiana	28	1	76	2
*Oklahoma	38	1	67	2
*Texas	110	3	226	5
*Montana	10	1	27	1
Idaho			13	
Wyoming			8	
*Colorado	31	1	81	2
New Mexico			18	
*Arizona	38	1	38	1
Nevada			4	
*Utah	11	1	28	1
*Washington	49	1	140	3
*Oregon	28	1	53	2
*California	205	5	412	9

Nutrition and the War

PERSONNEL MANAGEMENT IN AN INDUSTRIAL CAFETERIA[1]

E. LYNNETTE GATTEN

Director of Cafeterias, Glenn L. Martin-Nebraska Company, Omaha

A company-operated cafeteria benefits in many ways from the organization of the various departments. At Martin-Nebraska the cafeteria is one of the divisions served by the Personnel Department.

Applications for jobs in the cafeteria are made through the employment office. After the applicant has been interviewed and offered a job, she (the only male employees are chefs and stockroom boys, all others are women) is then given a pre-employment physical examination. Fingerprints and photographs are taken for use on identification cards. Cafeteria employees wait 3 days before being placed while results of the physical examination, which includes Wassermann and typhoid tests, are being studied. A medical recheck is given each cafeteria employee every 3 months.

When the new employee reports for work, she wears a badge, with identifying department number and name, which must be worn at all times while on the company premises. A Personnel Counselor attached to the Industrial Relations Department escorts new employees to a meeting room for an induction conference. A booklet explaining company policy is given each employee and discussed in detail. Group insurance, bond deductions, income tax deductions, and a score or more of other items are explained and cards filled in. Employees are shown how to use the time clocks and informed as to the importance of reporting absences. Pay, vacations, bonuses, lunch and rest periods, and first aid facilities are discussed. When the "lecture and class period" is finished, the Personnel Counselor conducts the new employees on a tour of the plant, showing them their respective pay stations, rest rooms, first aid stations, and finally the place where each will work.

Each new employee coming into the cafeteria is also given a few specific instructions before going to work. She is told how many uniforms are furnished a week, that hairnets must be worn, type of shoes to be worn, and she is reminded of the importance of reporting to the first aid station for any type of injury. The work she will do in the cafeteria is explained, and she is introduced to the various supervisors. She is warned about the dangers of lifting heavy objects; in fact, I have issued orders that no women employees are to lift certain pieces of heavy equipment.

The employee is then assigned a locker and receives her uniforms and aprons. The induction period having been completed, the new employee eats lunch and starts to work.

The cafeterias are open for business on all 3 shifts—for lunch hours, before the shift goes to work, and at the close of the shift for people working overtime. The cafeterias are closed only about 6 out of the 24 hours. Many plant employees eat all 3 meals in the cafeteria.

On the day shift, the Assistant Director of Cafeterias, Elizabeth Huey, and I are on duty. We also have a food production supervisor, institutionally trained, directing

[1] Excerpts from a paper presented before the American Dietetic Association, Pittsburgh, October 22, 1943. Miss Gatten holds the B.S. degree in home economics and institution management, University of Nebraska, and an M.S. received from the Department of Institutional Management, Kansas State College, where she served as assistant to Mrs. Bessie Brooks West. She has been in her present position since January 1942.

preparation for the noon lunch. In the afternoon, she supervises preparation for the second shift. In addition, we have trained supervisors in charge of both second and third shifts at the Main Plant. At the Modification Center's cafeteria one trained supervisor is responsible for all 3 shifts, but is on duty only during the first shift. Assisting her on second and third shift are two of our more responsible cafeteria workers, classified as "leaders." The groups supervised are small and the number served is proportionately smaller. To date this arrangement has proved satisfactory. The Flight Operations cafeteria is managed by a trained supervisor, responsible for all 3 shifts, with leaders on second and third shift.

We estimate that it takes from 2 to 4 weeks to train the average cafeteria employee. Each employee has a specific job to do each day. The cafeteria is open 7 days a week, but since on Sunday comparatively few are served, we do not have a full crew on duty that day. Because of absences, a schedule is posted each morning for stations during the noon hour.

Yes, we have had labor turn-over—those leaving to be married, or to join husbands, or to care for their children. Some, too, have found the work too strenuous.

The only prospective employees I interview are those seeking positions as supervisors. A supervisor is expected to know the duties of each cafeteria job; in an emergency, she must be able to take over any work that needs to be done. Many of our employees have never worked in a food service unit and therefore need very specific directions and actual demonstrations of the work to be done. Our pastry department started with one experienced worker, all others have been trained on the job. We believe our results show that the training has been good. We turn out 700 pies, 90 cakes (12 x 20-in. pan), 100 doz. breakfast rolls, and the dessert special daily, all made according to standardized recipes which are used in all kitchens.

Our percentage distribution for expenditures shows a raw food cost percentage of 64.16 which is high but we all agree that this is for the benefit of the plant employee. The labor percentage (30.70 including insurance and taxes) is also high but must be on a par with that in the factory. Our cafeteria workers start at 60 cents per hour, and uniforms, aprons, and towels are furnished. All expenditures for replacements and repair of equipment are taken from cafeteria funds.

Obviously, the serving of some 17,000 meals daily to industrial workers is no simple task. It demands careful planning and good organization. What success we do enjoy is due to the cooperation of everyone in the Cafeteria Department, from the supervisors down to the dishwashers and bus-boys.

FEEDING THE ARMY AND NAVY AT THE UNIVERSITY OF KANSAS[1]

HERMINA ZIPPLE

The problem of assembling a wartime feeding unit at the University of Kansas was probably no more unusual in its scope than that in other colleges and universities faced with a like demand. Selected as a training center for 500, a number increased later to 800, the University is now a training center for Machinist Mates, V-12, Naval Aviation Cadets, Army Specialized Training Program, as well as a group of Signal Corps and Aeronautical Technicians. The University was also selected as a training school for Navy cooks and bakers.

[1] This and the paper immediately following were presented before the American Dietetic Association, Pittsburgh, October 19, 1943.

Pending completion of a new kitchen and mess hall, the men were fed in the stadium for 3 weeks and their food prepared in 2 nearby buildings, transported to the stadium, and served in regular Army mess kits.

The main kitchen and bake shop of the Memorial Union Building was completely reorganized and divided to accommodate two separate food preparation units, one for the Navy, the other for the regular cafeteria and civilian patrons. This necessitated writing specifications and securing bids to be sent to the state business manager for approval before purchases could be made. Meanwhile, some college training units in the surrounding states were able to purchase without bids and wholesale equipment firms were becoming less interested in bidding. As a result, some of the equipment such as mixers, steamers, and choppers ordered in July 1942 arrived as late as February 1943.

Other major problems confronted us. The 25 Navy cook and baker trainees who were to accompany the first complement of men did not arrive until 2 or 3 months later; since we had depended on this group for food preparation, many inexperienced workers had to be drawn into the organization on very short notice. As our prevailing wage scale was lower than that offered by a nearby defense plant food unit, until we were able to make wage adjustments it was difficult to secure even inexperienced workers. Fortunately a large agricultural section surrounds the city of Lawrence, and we succeeded in hiring many farm women who wanted to assist in the war effort. Though inexperienced, they were willing to learn and made excellent workers. All employees are white with the exception of mop men, pot and pan washers, and mess hall janitors. University students were employed as counter girls on evening shifts; this, however, had its drawbacks since they were not available during regular university vacation periods and holidays. At present additional full-time personnel are employed to assist in vegetable and fruit preparation.

The ballroom of the Memorial Union Building became the mess hall, accommodating 600. A large double cafeteria counter was installed and regulation stainless steel 6-compartment trays were used which call only for cups, soup and cereal bowls, and tumblers in addition. Fifteen to 17 men per minute are served at the counter. The meal completed, the trainees pass by a clearing table where they sort silver, paper supplies, glassware, and milk bottles, and scrape and rinse their trays.

Men in the training school for cooks and bakers received daily classroom instruction and practical laboratory work in food preparation for a period of 16 weeks. Every 8 weeks, one-half the group graduated and was replaced by a new group. A master-at-arms was responsible for discipline and work schedules were made each week rotating all men and providing well-rounded experience. The standard texts were the *U. S. Navy Cooks Manual* and *Navy Bakers Manual* with other supplementary material. At the completion of each assignment, a written examination prepared by the Navy Department was given and when all assignments were completed, a final examination. A number of films were used in classroom instruction on sanitation, food preparation, meat cutting and cookery, as well as carving. As laboratory work in food preparation a series of large quantity food recipes was developed. The need for standardized recipes in order to have uniformity of product was continually stressed. Many trainees had never had experience in food units; others had been butchers or restaurant operators in civilian life. As each class graduated, the members received mimeographed copies of the recipes they might need. All food was prepared by these trainees, and all baking except bread was done in the bake shop, the men receiving prac-

tical demonstrations in mixing of yeast doughs and batters. Field trips supplemented work in the regular food units, and storeroom instruction in the issuing of supplies. At the end of the training period, the men received ratings as ships cooks or bakers, third class, and many are now preparing food on destroyers, cruisers, or mine sweepers, or in large naval training bases. When the training schools were discontinued in all contract schools, additional civilian personnel had to be trained to replace the trainees.

Facilities for dry storage at first were quite inadequate. Gradually, however, it became necessary greatly to enlarge the storerooms in order to store canned goods and staples in large amounts when these were available for purchase; the large game and recreation room was accordingly reserved as a permanent storeroom. In issuing supplies, regulation Navy issue books from the Supply Department are used by the storeroom man who receives a list of items to be issued to the main kitchen and bake shop each morning. The original is sent to the Supply Department, the duplicate to the office for transfer on perpetual inventory cards, thus furnishing an excellent means of checking the actual amounts on hand, and for comparison of perpetual inventories with those taken at the end of each month.

The storeroom clerks play a very important part in food cost control. They check all items received and weigh those which have been purchased by weight since even small discrepancies or leakages, if repeated, heavily influence the total monthly cost. Some work has been done on daily cost accounting in the light of daily storeroom issue sheets, the menu of the day, and the cost calculation of recipes used, in order to determine the daily food cost per man.

The Army and Navy differ slightly in the emphasis placed on ration points and their use. The former appears to stress purchase; the latter, use. In the Army it is understood that if it is apparent that all ration points for the month will not be used, additional purchases may be made before the end of the month for use later. Since no ration point inventory is taken at the end of the month, the additional purchases serve as a backlog. The Navy, on the other hand, requires a careful ration point inventory at the end of each month. The total purchases are calculated and the ration point inventory is subtracted from this which gives the total number of ration points used during the month. No credit can be carried over to the following month, and if the ration allowance has been exceeded this must be compensated for as soon as possible.

Calculation of ration points is on a daily basis by means of storeroom issue records and daily purchases. A further check on ration points is made after each 10-day period to determine the points still available for the month. We are fortunate in having large produce centers fairly close at hand. Cars of mixed vegetables—cabbage, cauliflower, radishes, onions, and celery come from Colorado; carrots from California and Arizona; western fancy boxed apples from Idaho; peaches, plums, apricots, and prunes from Utah and Idaho; boxed pears from the Medford, Oregon, region; grapes from California. Kansas City packing houses have been a good source for meats.

Another problem in food control is conservation of food and salvage of food refuse, concerning which certain naval establishments have adopted a definite program. Based on estimates of the number of men who will not appear at meals either because of illness or for other reasons, the policy of 4 per cent underpreparation is followed. Needless to say, real economy is thus effected since this figure appears to be a fairly accurate absentee percentage. Otherwise, excess food would become waste since the Navy does not permit leftover food to be served. Standard portions, and portions no larger than will be eaten (particularly of less popular dishes, including some vegetables), are other practical means of reducing waste.

Among the items which are segregated for salvage are kitchen grease, uncooked and cooked bones, meat table scraps, etc. In some large galleys interceptor grease traps have been installed to catch all available waste grease. Other items segregated and sold from large galleys are citrus peel and coffee grounds, as well as nonfood items such as potato bags, hampers, apple boxes, gallon glass jars, barrels, etc. The sale of such items often mounts to sizable figures. At the same time, we are able to contribute to the country-wide conservation program.

FEEDING THE ARMY AND NAVY AT THE UNIVERSITY OF IOWA

THEODORE M. REHDER

At the University of Iowa we are feeding 1800 to 2000 Navy aviation cadets attending the U. S. Navy Pre-Flight School, an officer staff of approximately 200, the Ship's Company comprising 175 enlisted men, approximately 350 members of the Army Air Corps Meteorology Unit, and the various Army A. S. T. P. units totaling 1100 to 1200 men. We are also operating Currier Hall, a dormitory in which approximately 650 civilian women students are fed, and the Student Union with its soda fountain and luncheon service. Altogether the meals total about 15,000 per day.

The University Dining Service Office is responsible to the University business manager for the policies, operation, and supervision of all food units except that at University Hospitals which is directed by Dr. Kate Daum. Each food service unit is headed by a manager and assistants. Of the 15 serving in a managerial or a supervisory capacity, 11 are either members of the American Dietetic Association or have had suitable training for the positions.

We have a Purchasing Department set up for central purchasing, bulk storage, and warehousing of supplies. We also have our own delivery service, and large warehouse facilities capable of handling approximately 50 carloads of merchandise as supplies are purchased in carload lots whenever possible. We have our own central meat market which buys carcasses or wholesale cuts of meat, and in which all cutting, trimming, and grinding preparatory to cooking is done. Meat is delivered daily. Bids for perishable goods are made on a weekly basis or for longer periods, depending on the commodity. Each manager orders supplies as needed from the vendor to whom contracts are awarded, and is responsible for seeing that merchandise delivered is up to specifications.

Repairs and maintenance are charged directly to each operating unit. All records necessary for the operating statement go directly from the units to the University Accounting Department where the statements are prepared.

Our Quadrangle men's dormitory, which housed 700 students in prewar days and fed from 250 to 300 per meal, was equipped to feed 1200 to 1400 men by adding a vegetable preparation room, refrigeration, stoves, steam-kettles, steamers, ovens, and a large dishwashing room with equipment, and by replacing tables and chairs with mess tables and benches which almost doubled the seating capacity in the cafeteria. The cafeteria counter was converted for Navy service and another counter installed, giving two lines for service. Cadets come in, pick up their silverware, stainless steel compartment trays and food, go to tables, eat, and exit through the dishwashing room at the other end of the cafeteria.

In order to equip the Hillcrest dormitory kitchen to serve 500 to 800 persons—a kitchen originally built to

DIETITIANS WILL WELCOME THESE RECIPES WHICH REQUIRE LESS BUTTER, FEWER EGGS

With these tested recipes, it's easy to make delicious cookies, fine-textured cakes and rich-tasting sauces that require less butter, less sugar, and fewer eggs and that, at the same time, are unusually wholesome because they contain an extra amount of whole milk solids and vitamin D.

Among these recipes—all geared to wartime—are some which demonstrate how Irradiated Pet Milk takes the place of cream—both sweet and sour—and how Pet Milk, because of its double-richness, can improve the flavor and nutritive value of cakes, cookies, and sauces.

All of the recipes are time-savers because they have been tested until they are failure-proof. All are money-savers not only because they require less butter, less sugar, fewer eggs, and no cream—but because Irradiated Pet Milk costs less generally than ordinary milk, much less than cream.

Use coupon below for your free copy of these valuable wartime recipes.

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Please send me, free of charge, _____ **copies of "Sugar Saving Cakes and Cookies"**

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service a coffee shop seating 130—we added a dishwashing room which alone is as big as the original kitchen, new dishwashing equipment, a vegetable preparation room, extra refrigeration, stoves, steam-jacketed kettles, and ovens. The lounge adjacent to the kitchen was converted into a mess hall.

Some time ago we began to staff our units with women, older men, and a few young people. All employees are on a straight shift, an 8-hour day and a 6-day week, including managers and supervisors. In spite of this we have constant labor turn-over.

All Army and Navy schedules are planned on the basis of serving not less than 15 men per minute through each line, and 20 minutes is allowed to eat a meal. The Navy Pre-Flight School feeds the entire base of 1800 to 2000 cadets, plus officer staff and enlisted men, in one hour's time if the schedules operate continuously. The Navy schedule is worked out by the Regimental Commander, and our only responsibility is to see that when mess call is sounded we are ready to serve. For the Army groups we make out the messing schedules.

At the Commons we feed 350 meteorologists in less than an hour. At the Union we feed 1200 in 80 minutes' actual serving time. From 12 noon to 12:40 we feed the first half of the group which allows the last man through the line to reach a 1:10 class. The second group arrives at 1 p.m.

The managers or supervisors plan the menus for the Army groups, with the Army's Master Menu as a basis; menus are sent to our office, then to the Medical Officer and the Commanding Officer for approval. The Pre-Flight School menus are planned by the managers or supervisors, sent to our office, then to the Commissary Steward who acts as liaison officer on Navy feeding, then to the Commanding Officer. Because of the nature of the training program the Navy group requires a much heavier menu (4500 to 5000 calories per day) than the Army. Trainees and cadets are allowed "seconds" on everything except dessert, provided they have eaten everything on their first tray. The amount of food left on trays is negligible.

Army units follow the regular Master Menu allowance for rationed foods. The point allowance for the Navy is much more liberal than that for other groups because of the heavy athletic program.

We use a simplified daily cost system, set up with the help of the firm of Horwath and Horwath, which gives a daily food cost for each unit in the following divisions—meats, poultry, sea-food, fresh fruits and vegetables, butter, eggs, milk and cream, ice cream, bread and rolls, beverage, staples, and field lunch—and enables us to keep a check on our daily costs and a comparison between units before monthly statements come out.

Senior medical students from the University Department of Public Health take bacterial counts on dishes and utensils two or three times each week in addition to their regular sanitary inspections, and report to our office and to each manager. The Army and Navy, in addition, make their own inspections.

Both the Army and Navy have been most cooperative in planning the food units, procuring equipment, and in the operation of the units.

THE ARMY FEEDING PROGRAM AT KANSAS STATE COLLEGE

LUCY C. WELLS

Among the minor miracles marking America's conversion from peacetime pursuits to all-out war production, should be classed Kansas State College's feat of serving 4800 meals a day to Army trainees in a modern, sanitary mess hall conjured up in a few short weeks from a sod-floored livestock judging pavilion.

With the coming of 1600 Army trainees to the campus last year there arose a pressing need for a greatly expanded feeding program. The first arrivals, a few hundred Air Corps trainees, were fed in the banquet room of Thompson Hall, the college cafeteria. By early summer the induction of an additional group of engineers and veterinary students necessitated the expansion of messing facilities to include half the cafeteria dining room, and it was not long until the program outgrew Thompson Hall altogether. Members of the Departments of Institutional Management and Building and Repair looked the campus over for a suitable location and selected the livestock judging pavilion, erected in 1913, which connected two other buildings:

As a first step in converting this pavilion into an up-to-date, sanitary mess hall, the show arena and bleachers for onlookers were removed, a concrete floor replaced the sod, and walls were fumigated and painted. The meat laboratory located in a nearby building was selected for a kitchen since it was equipped with electric freezing units and adequate refrigeration. This room was connected with the mess hall proper by an all-weather runway on the same floor level through which cooked foods are conveyed on carts from the kitchen to the serving counters.

Gas, water, sewer connections, and a ventilation system were installed, and four small basement rooms, formerly used for smoking meat, were reconditioned for emergency storerooms. The large main storeroom is in another part of the building.

Two garbage houses were built, one on either side of the kitchen. These were screened, and water and live steam installed to facilitate sterilization.

As the kitchen, formerly a classroom, measures but 37 by 47 ft., production space is crowded. Since 4 long steps extending across one side of the room could not be removed, ranges and ovens had to be placed on these to conserve space. Equipment in the kitchen includes sinks, 6 heavy-duty ranges, roasting ovens, sectional steamers, stock-pots, and a mixer.

The experimental laboratory with its separate refrigeration space was converted into a salad room. Half the basement was equipped for the bake shop, and the other half as a vegetable preparation room.

The mess halls consist of two large dining rooms, approximately 50 by 100 ft., each seating 400 men. They are equipped for cafeteria-style service with a double arrangement of steam-tables and counters, thus permitting four lines of service. Behind the counter are hot-plates, a bain-marie, a 4-deck oven, a refrigerator, and cupboard and table space.

The dishwashing room, formerly box stalls in which exhibition animals had been housed, is well equipped with an electric dishwashing machine and ample table space, also a pot sink and linen cupboard. It is located between the two dining rooms. Adjoining the dishwashing room and adjacent to each dining room is the scraping room.

All personnel handling food or containers must pass a physical examination by an Army medical officer, and every effort is made to protect the well-being of mess personnel and those they serve.

Ration allowances are determined by the Quartermaster General. Fresh fruits and vegetables are served often since ration points do not permit unlimited use of canned goods. Butter is restricted to one pat per meal except when fresh corn or baked potatoes are served, in which case an extra half square is allowed.

The men are requested to refuse any food that they do not intend to eat, as they go through the line. Each man, too, indicates to the server whether he wishes a large or a

Two Cereals Helpful in Ulcer and other Gastro-Intestinal Cases

The restricted diet prescribed in ulcer and other gastro-intestinal conditions often presents the problem of an insufficient intake of thiamine.

The use of Gerber's cereals in these cases will be helpful, for both cereals are enriched with thiamine.

Frequently also, the normal absorption of iron from the intestinal tract is interfered with by the use of antacids. Gerber's Strained Oatmeal and Gerber's Cereal Food are enriched with iron pyrophosphate, a satisfactory source of iron.

The milk used in serving the cereals is expected to supply the riboflavin requirement.

Crude Fibre Content is Low

The processing of these cereals eliminates much of the fibre content. When milk is added, the crude fibre is less than 0.2% and this is so finely divided that it is non-irritating to the digestive tract of infants one month old.

Special attention has been paid to make both Gerber's cereals tasty and appetizing. This is particularly welcome to adults on a restricted diet. Adding strained fruits or juices is a good way of introducing them into the diet and adding variety in flavor at the same time.

When serving, only hot or cold milk need be added because both cereals are pre-cooked.

Nutritive Values of Gerber's Cereals

	Thiamine mg.	Iron mg.	Calories	Crude Fibre %
One ounce Gerber's Cereal Food	0.39	12.5	106	1.4*
One ounce Gerber's Strained Oatmeal	0.37	12.0	110	1.0*

*¼ oz. dry cereal with 2 oz. milk: Cereal Food .28% crude fibre, Oatmeal .2% crude fibre.

Gerber's

CEREALS STRAINED FOODS CHOPPED FOODS

For a complimentary copy of Gerber's Recipe Book for adult special diets, write Gerber Products Co., Dept. 233, Fremont, Mich.

small serving, all of which tends to keep food waste at a minimum.

Menus are planned 2 weeks in advance. Army priorities permit purchasing the best quality of food the market affords but deliveries at times are uncertain.

The quantities of food for one day's menu include, for example, 14 lugs grapes, 8 cases eggs, 700 qt. milk, and 80 gal. coffee for breakfast; 120 lb. spaghetti, 400 lb. hamburger, 15 hoppers green beans, 400 lb. salad greens, 100 "Pullman" loaves of bread, 30 lb. butter, 60 gal. chocolate pudding, and 375 qt. milk for lunch; 700 lb. roast beef, 800 lb. potatoes, 8 bushels carrots and turnips mixed, 4 crates lettuce, and 235 pies for dinner.

One chief dietitian and 7 assistants, all members of the Department of Institutional Management, are in charge of the mess hall.

The food is prepared and cooked by women, mostly housewives, many with sons in the service. Standardized recipes are used. A typical day's menu follows:

Breakfast	*Lunch*	*Dinner*
Fresh grapes	Creole spaghetti with meat balls	Roast beef
Oatmeal	Fresh green beans	Gravy
Fresh milk	Tossed vegetable salad	Mashed potatoes
Scrambled eggs	Bread and butter	Buttered carrots and turnips
Bread and butter	Chocolate pudding	Head lettuce salad with Thousand Island dressing
Jam	Milk	Bread and butter
Coffee		Rhubarb pie
		Coffee

Beef is the most popular meat served. Potatoes, peas tomatoes, and green beans are enjoyed more than other vegetables. Tossed fresh vegetable salads and head lettuce with Thousand Island dressing are much liked. Raw vegetables as celery, radishes, green onions, and carrots are consumed in increasing quantities. Ice cream and pie are first on the list of dessert choices. The men are especially fond of milk and are allowed as much as they want for breakfast, both to drink and for cereals. At noon they each receive a half-pint.

The reaction of the servicemen themselves toward the mess hall setup, for the most part, has been gratifying. They seem to appreciate the good food and service. Evidently this emergency feeding program is satisfactorily fulfilling its purpose.

MEDICAL DEPARTMENT DIETITIANS APPOINTED IN JANUARY 1944

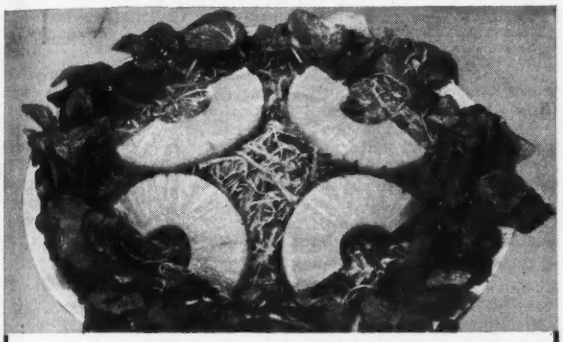
This list of appointments includes information, as before, in the following order: the name; the college or institution from which academic degree was received; and the civilian or Army hospital at which training was received. Appointees for whom no training course is listed have been accepted on the basis of "qualified experience."

Barnes, Martha Lee: Ohio Wesleyan Univ.; Philadelphia General Hosp.
Bately, Martha Elizabeth: Col. of St. Catherine, Minn.; Johns Hopkins Hosp.
Benton, Bertha Johanna: Michigan State Col.; Starling-Loving Hosp.
Beyer, Audrey Adeline: Milwaukee-Downer Col.; Colorado General Hosp.
Casey, Mary Lois: Berea Col.; Walter Reed G. H.
Chock, Mew Ung: Univ. of Hawaii; Montefiore Hospital, N. Y.
Cuming, Miriam Marshall: Univ. of California; Latter-Day Saints Hosp.
Dale, Mary: Univ. of Idaho; Massachusetts General Hosp.
Englund, Ruth Emmelene: Univ. of Colorado, and State University of Iowa; Iowa University Hosp.
Farrell, Monica: Mt. St. Scholastica Col.; St. Louis University Hosp.
Ferdinand, Gelsie Rose: Pennsylvania State Col.
Fesenmeyer, Mary Katheryn: Seton Hill Col.; St. Mary's Hosp., Mich.
Foin, Louise Chen: Univ. of Wisconsin; Cook County Hosp.
Fowler, Delta Neal: Univ. of Arizona; Stanford University Hosp.
Frederick, Mildred Lucille: North Dakota State Col.; Massachusetts General Hosp.
Hardenbrook, Marion Alexine: Colorado State Col.; Johns Hopkins Hosp.
Harlan, Jean Eleanor: Iowa State Col.; Vanderbilt University Hosp.
Heisler, Virginia Cranmer: Drexel Institute of Tech.
Jarussi, Rosemary: Montana State Univ.; St. Mary's Hosp., Mich., and S. H., Ft. Lewis, Wash.
Kutnick, Marion: Western Reserve Univ.; Jewish Hosp., Brooklyn.
Lamb, Roberta Harriett: Univ. of Illinois; Univ. of Chicago Clinics.
Lidofsky, Ida: Univ. of Connecticut.
McFeely, Martha Yvonne: Univ. of California; Stanford Univ. Hosp.
McLaren, Mary Jacqueline: Iowa State Col.; Indiana Univ., Med. Cent.
Mallon, Ruth Elizabeth: Col. of Chestnut Hill, Penn.
Matthews, Anne Rasin: Univ. of Maryland and Teachers College, Columbia Univ.; Fifth Ave. Hosp.
Miller, Wilma L.: Univ. of Minnesota; Jewish Hosp.
Morris, Gladys Ruth: Oklahoma A. & M. Col.; Cook County Hosp.
Nilson, Violet: Univ. of Illinois; Cook County Hosp.
Riley, Winifred Grace: New York Univ.; Montefiore Hosp., N. Y.
Ryer, Miriam Skladal: Pennsylvania State Col.; Walter Reed G. H.
Silverstein, Romona Rose: Univ. of North Dakota; New Jersey Coop. Course and Moore G. H., N. C.
Smith, Marguerite Mary: Col. Misericordia; Walter Reed G. H.
Tompkins, Virginia Elizabeth: Miami Univ.
Tull, Margaret Elizabeth: St. Joseph Col.; St. Mary's Hosp., Mich.
Vorhies, Dorothy Lu: Texas State Col. for Women; Harper Hosp.
Ward, Marion Gertrude: Col. of St. Elizabeth.
Wark, Jane Margaret: Univ. of Manitoba.
Wertman, Maude Olive: Iowa State Col.; Ancker Hosp.
Woodward, Mary Lincoln: Purdue Univ.; Beth Israel Hosp., Mass.

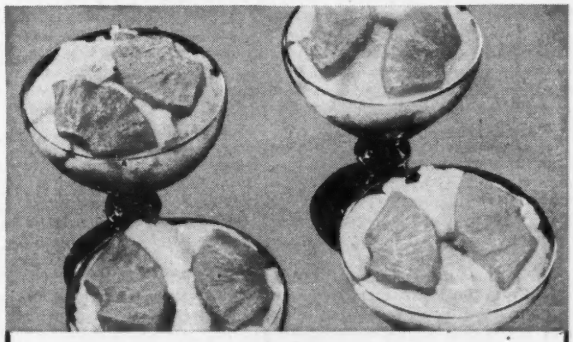
Meat vs. Cereal

Any program of reducing livestock numbers has the initial effect of rapidly increasing human food supplies. At the start we would have as human food both the meat from the slaughtered stock, and the food released from feeding them. This double effect does not last long. Our entire livestock inventory, on a calorie basis, would feed the nation only about three months. After that we would have to live on the corn meal without the pork as a side dish. If we were to go the limit and reduce livestock so far that no human food products would be converted into meats and livestock products, we could, with continued favorable crop weather, feed about one-fourth of these 1.4 million people on a continuing basis. Such an extreme shift is unlikely. But that is the direction of change in our agricultural production and in our diets that will have to occur, if we are to supply much food to other countries. How far we will go depends on the extent of encouragement or discouragement given to livestock production. So far this has been encouraged. So long as we have the livestock, we will feed them; this will help justify our reluctance to shift our consumption in the direction of a cereal diet. *Excerpt from "How Much of the World Can We Feed," an address by F. A. Harper before the New York State Joint Legislative Committee on Nutrition, December 15, 1943.*

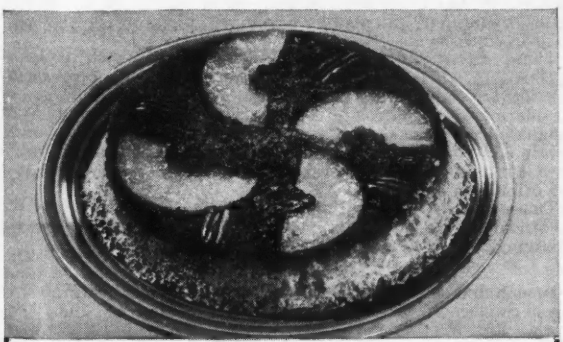
Look- all from one can of LIBBY'S PEAK FLAVOR PINEAPPLE!



"COMPANY" COLE SLAW: Combine 2 tbsp. chopped green pepper, ½ cup diced unpeeled apple, 1 tsp. salt, 1 tbsp. sugar, and ¼ cup vinegar. Shred crisp cabbage, measure 3 cups and add to other ingredients. Toss together, place in a salad bowl on a bed of watercress, and cover with 1 cup shredded carrots. Top with 2 slices Libby's Sliced Pineapple cut into halves. Serves 4.



PINEAPPLE ICE: Bring 4 tbsp. sugar and ¾ c. water to a boil. Add 2 tsp. unflavored gelatin soaked in 2 tbsp. cold water. Cool. Add ¾ c. pineapple syrup, 2 tbsp. lemon juice and ⅛ tsp. salt. Freeze until mushy. Place in chilled bowl; beat fluffy. Fold in 1 stiffly beaten egg white. Freeze until firm. Top each serving with ½ slice Libby's Pineapple cut in two. Serves 4.



UPSIDE-DOWN CAKE: Melt 1 tbsp. butter in a 7½-8 inch skillet or cake pan. Add ¼ cup brown sugar, 2 slices Libby's Pineapple cut in halves, and a few pecan halves. Beat 2 egg whites stiff. Add 2 egg yolks and continue beating, gradually adding ½ c. sugar. Gradually fold in ½ c. sifted cake flour, ½ tsp. baking powder, and ⅛ tsp. salt which have been sifted together. Add 2 tbsp. water and ½ tsp. vanilla. Pour over fruit; bake in a mod. slow oven 325° F. about 30 min. Serves 4.

DESSERT PANCAKES: For 4 people, make 8 small thin pancakes. Place 1 tbsp. filling on each; roll up loosely; serve with sauce. FILLING: Cream 2 tbsp. butter. Add ½ cup powdered sugar; cream together. Gradually add 2 tbsp. pineapple syrup. SAUCE: Stir ½ cup pineapple syrup into 1½ tsp. cornstarch. Add 1 tbsp. each of lemon juice, grated rind, butter or margarine. Cook, stirring constantly, until thickened. Cook 3 min. more. Cut up, add 2 slices Libby's Pineapple. Serve hot.

● 4 different dishes . . . 16 servings . . . all from just one No. 2½ can of Libby's Hawaiian Pineapple! Here's a practical demonstration of how to make fine flavor go farther in these days of ration coupons. (The only other Rationed items called for in the recipes are 1½ cups of sugar and ¼ cup of shortening.)

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LIBBY PACKS A GREATER VARIETY OF FOODS UNDER ONE LABEL THAN ANY OTHER COMPANY IN THE WORLD

Book Reviews

Are You Allergic? By Jessamine Hilliard and Charles C. Cochlan, M.D. New York: M. Barrows and Company, Inc., 1943. Cloth. Pp. 248. Price $2.50.

Written in a chatty, conversational style to cater to what is supposed to be the popular taste, this book succeeds in covering considerable ground concerning a subject that is seemingly limitless in scope.

Authored by a "research and laboratory specialist" and a "famous allergist of the West Coast" (whose name we do not find in the *Directory of Medical Specialists* for 1942), the book will be read with interest by both lay and professional persons. Something of the historical background of medical knowledge concerning allergy is given, followed by perhaps hundreds of examples of allergic symptoms interspersed with references to prominent specialists in the field and their methods of treating such conditions.

The book is surprisingly different from other books on this subject in one important respect at least—there are *no* recipes or menus, and neither of these words, not even the word "diet," appears in the index. Even the subject of food allergy *per se* receives but a scant four pages. But this does not mean that the content will not interest the dietitian. Rather, will she profit by the knowledge that so many factors other than diet can contribute to the annoying symptoms characteristic of the allergic state. References to specific foods do appear here and there throughout the text, of course, in connection with discussions of allergy and stomach ulcers, irritable colons, and so on.

In brief, this is an extremely interesting book, apparently well documented, and certainly well fortified by an imposing bibliography. It may be, as the authors hope, that the book will be suited to the lay reader and, at the same time, "especially invaluable for the physician who has not specialized in allergy and who is only beginning to apply new allergy findings in his practice." Undoubtedly it will be so to the latter, but we suspect that the average layman may find the book allergic to his peace of mind and possibly too conducive to self-diagnosis.

Fundamentals of Chemistry and Applications. Second edition. By Charlotte A. Francis, A.M., and Edna C. Morse, R.N., A.M. New York: The Macmillan Company, 1943. Cloth. Pp. 537. Price $3.50.

As the the subtitle states, the "fundamentals" covered in this text are "chosen from inorganic, organic, and biochemistry, with applications in everyday concerns and in the applied sciences, including physiology, cookery, bacteriology, and materia medica." Written specifically for certain specialized schools, including all schools of nursing and "some schools of home economics" which call for a half year or at most one year of chemistry, the content has accordingly been greatly limited and carefully selected in keeping with the purpose for which the book was written.

Changes and additions in this second edition include: simplification of the chapter concerning molecular and atomic weights, etc.; a table of valences; reorganization of the chapter on true and colloidal solutions and emulsions so that study assignments can be made more effectively; revision of the discussion on ionization; complete revision and reorganization of the chapter on cyclic compounds and inclusion here of new data on chemotherapy.

Finally, instead of a separate chapter on the vitamins, these are discussed here and there, as befits a book of this type, from the standpoint of their chemical composition or proved relationship to physiological processes under discussion. More detailed treatment, in the opinion of the authors, is a function of biochemistry and nutrition and would be out of place in an already overcrowded course in the fundamentals of chemistry.

Textbook of Physiology. Eighth edition. By William D. Zoethout, Ph.D., and W. W. Tuttle, Ph.D. St. Louis: The C. V. Mosby Company, 1943. Cloth. Illustrated. Pp. 727. Price $4.75.

As before, this book is intended to fill the gap between the larger texts and those offering a briefer course, and is suitable for use with dental, pharmacy, and normal school students, and possibly for nurses. The book goes further than some academic texts in that more space is devoted to the practical side of nutrition, physical exercise, mental work, fatigue, etc. For example, the importance of specific types of food and diet is discussed, beyond a mere description of the function of food in these processes, in chapters on movements of the alimentary canal, carbohydrate and fat metabolism and elsewhere. In the chapter on foods, much attention is given to the composition of proteins, supplemented by a separate chapter on protein metabolism and two sections in the chapter on food requirements of the body. The chapters on foods and food requirements are sound and have been brought up to date.

For those familiar with previous editions of this text it should be noted that material wholly or partly rewritten includes that dealing with protoplasm and circulation, and many topics in other chapters. Notable features of the present edition are the setting of advanced material in smaller type so that it may be omitted without destroying the continuity of the text, the wealth of new illustrations and helpful charts (*vide* diagram to illustrate protein metabolism, and another showing the interconversion of the organic foodstuffs), glossary of prefixes, suffixes, and scientific terms, and list of selected references.

Economy for Epicures. A Practical Menu and Recipe Book. By Mary L. R. Taylor. New York: Oxford University Press, 1943. Cloth. Pp. 511. Price $2.75.

Apparently there is always room for another cook book, for new cook books by new authors appear in rapid succession. It seems that the homely art of cookery develops the urge for self-expression and is conducive to inspiration, for most of the cook books launched are pleasantly varied in character and content.

Mrs. Taylor's is no exception in this last respect; in fact, it is an especially pleasing book in design and gustatory appeal. It bespeaks a cosmopolitan knowledge of, and taste in, foods and offers helpful suggestions in the form of seasonally grouped collections of lunch, supper, dinner, party, buffet, and "quick" menus, to aid the menu planner who inevitably grows jaded unless aided by such means.

There are 400 menus and 1198 recipes—18 of which, it seems pertinent to add, are for that wartime standby, chopped meat. Mrs. Taylor employs a code system to broaden the usefulness of her offerings: "opt.," for instance, means that the ingredient so designated is optional in a given dish; "LO," a leftover; while certain odd-numbered menus are conventional, *i.e.* suited to one's mother-in-law, and those even-numbered are less conventional and often less expensive.

Those who yearn for but one cook book or those whose shelves are already bedecked with a goodly variety, will find this sample satisfying.

Food Selection and Preparation. Third edition. By Marion Deyoe Sweetman. New York: John Wiley and Sons, Inc., 1943. Cloth. Pp. 512. Price $3.50.

This excellent text, previously titled *Food Preparation*, and reviewed (in its second edition) in this JOURNAL for November 1937, now very properly has been retitled in line with the fact that emphasis throughout is on methods productive of the highest nutritive value at an appropriate cost, which include, of course, proper food selection.

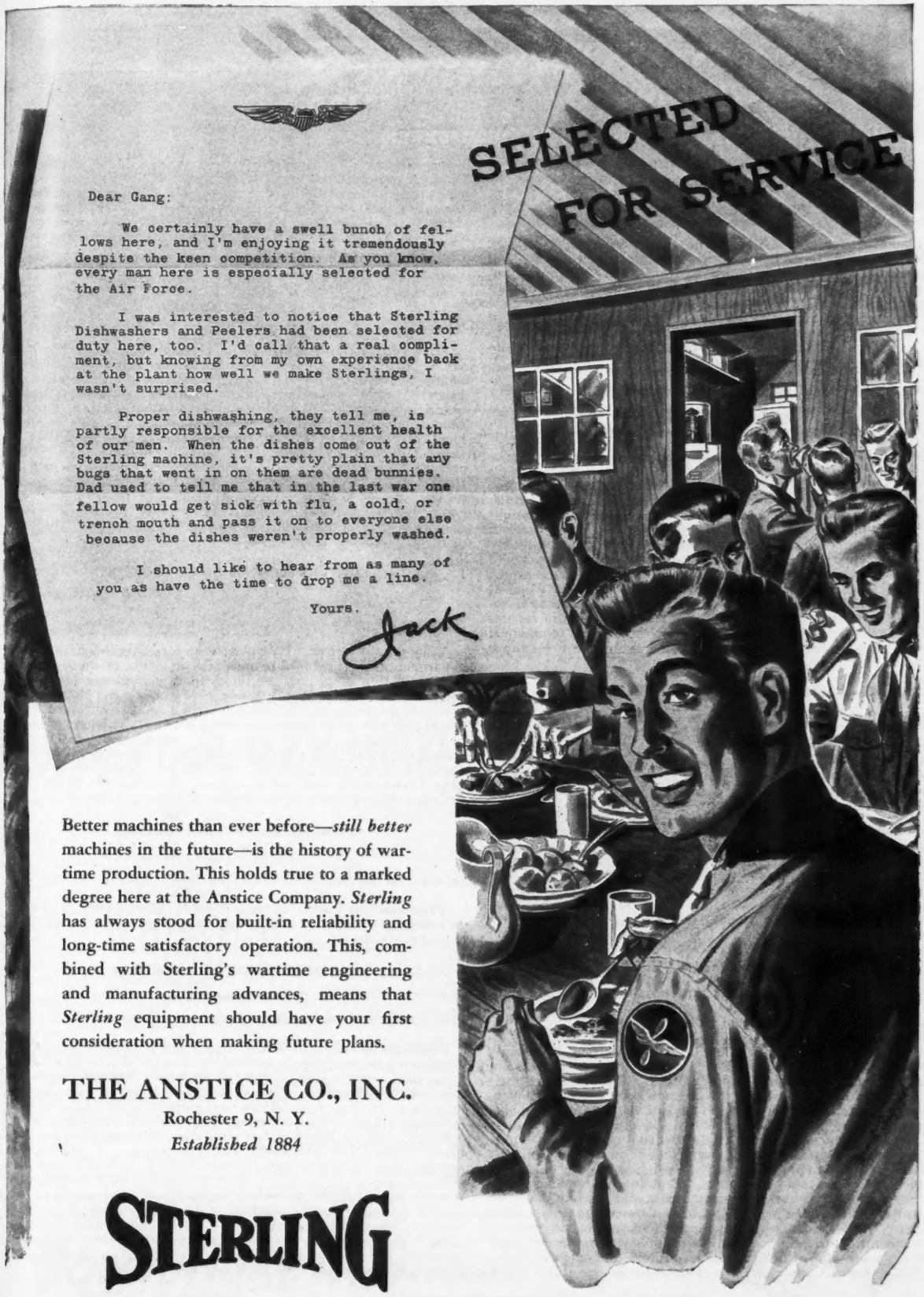
Revisions throughout have been made in accordance with research findings in the intervening six years since the previous edition, and the chapter on meal planning has been expanded to include the elements of food purchasing.

The book's content has been carefully prepared and carries extensive references to the literature. For those unfamiliar with the book, it should be said that while the treatment is appropriate for a beginning college course in food preparation, some previous training in chemistry would be necessary, preferably a semester of inorganic chemistry, after which the text under review could be properly absorbed if paralleled with a course in organic chemistry.

TO ALL DIRECTORS OF STUDENT DIETITIANS' TRAINING COURSES:

This is to remind you of the request that you try out the rating sheets for students which were presented at the Pittsburgh meeting, American Dietetic Association. We will ask for your comments later, so that we may have material for the workshop at the Chicago meeting this October.

If your sample copy has been misplaced, please write to Gladys E. Hall, 620 N. Michigan Ave., Chicago 11, for another. Additional sheets may either be purchased from the Chicago office, or made up at your own hospital.—MARGARET COWDEN, *Chairman, Project 4, Professional Education Section.*


SELECTED FOR SERVICE
Dear Gang:
We certainly have a swell bunch of fellows here, and I'm enjoying it tremendously despite the keen competition. As you know, every man here is especially selected for the Air Force.
I was interested to notice that Sterling Dishwashers and Peelers had been selected for duty here, too. I'd call that a real compliment, but knowing from my own experience back at the plant how well we make Sterlings, I wasn't surprised.
Proper dishwashing, they tell me, is partly responsible for the excellent health of our men. When the dishes come out of the Sterling machine, it's pretty plain that any bugs that went in on them are dead bunnies. Dad used to tell me that in the last war one fellow would get sick with flu, a cold, or trench mouth and pass it on to everyone else because the dishes weren't properly washed.
I should like to hear from as many of you as have the time to drop me a line.
Yours.
Jack

Better machines than ever before—*still better* machines in the future—is the history of wartime production. This holds true to a marked degree here at the Anstice Company. *Sterling* has always stood for built-in reliability and long-time satisfactory operation. This, combined with Sterling's wartime engineering and manufacturing advances, means that *Sterling* equipment should have your first consideration when making future plans.

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Current Literature

Contributed by Helen Baughman, Janet Engebretsen and Hilda McEwen, Dietary Department, Johns Hopkins Hospital, Baltimore; Quindara Oliver Dodge, School of Home Economics, Simmons College, and Women's Educational and Industrial Union, Boston; and the Journal Staff.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

Vol. 66, December 1943

*Uniformity of riboflavin content of milk produced under standardized conditions. A. D. Holmes and J. O. Holmes.—p. 607.

Riboflavin Content of Milk. The riboflavin content of milk varies from as little as 0.53 mg. per liter to 7.8 mg. per liter in Jersey milk. Summer milk contains from 20 to 50% more riboflavin than winter milk; a drought will cause as much as a 25% lack in this vitamin. Cows kept on standard conditions for 4 months produced milk showing an average riboflavin content of 1.46 to 1.50 mg. per liter. These results justify standard feeding to dairy herds so that consumers will be assured of milk with a dependable, uniform riboflavin content.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

Vol. 206, December 1943

*The fever curve of therapeutic fads. O. H. P. Pepper.—p. 703.

Therapeutic Fads. Progress of a therapeutic fad could be plotted like a fever curve. Venesection, auto-intoxication, tonsillectomy craze and strychnine administration have all passed through stages of widespread administration, comparative disuse, and finally to proper control use. We are today at the height of the vitamin fad; before long the period of neglected use will come and finally vitamins will be placed on a reasonable basis. Enthusiasm for the sulfonamides appears to be based on sound logic; yet treatment of septicemia by intravenous mercurochrome was a positive "fact" that fell into disrepute shortly. Administration of sulfonamides in case of virus disease, bacterial infections, and numerous other conditions will bring more reports of toxic effects; therapeutic failures are appearing in medical papers. Fever curves in medicine can be avoided by resistance to therapeutic fads.

AMERICAN JOURNAL OF PUBLIC HEALTH AND THE NATION'S HEALTH

Vol. 33, December 1943

*The evolving pattern of tomorrow's health I. Prerequisites to improved public health. J. W. Mountin.—p. 1401.

*The evolving pattern of tomorrow's health. II. The post-war city. C.-E. A. Winslow.—p. 1408.

*Some medical aspects of protein foods. F. J. Stare and G. W. Thorn.—p. 1444.

Prerequisites to Improved Health. The present concern of all persons interested in public health should be: (1) to hold gains already made in raising general health level; (2) to increase these gains by extending health services now in operation to all segments of the population; (3) to broaden public health service to include essential elements of medical care; and (4) to exploit possibilities in research. National coverage by full-time health organizations should be secured. Differences in opportunity for receipt of medical care could be corrected by removing economic barriers and by redistributing professional personnel and hospital facilities. Research activities should be concentrated upon prevention and cure of mental disorders, acute respiratory infections, and dental caries. Public health can be significantly advanced also by improving our understanding of nutrition.

Health of the Postwar City. Among the essential needs which must be met in planning for a healthful city is access to primary sources of food supply.

Some Medical Aspects of Protein Foods. The protein requirement of man in the present state of knowledge cannot be quantitatively stated in terms of amino acids under standardized conditions. Calorie intake from carbohydrate and fat spares protein and in the presence of sufficient calories from nonprotein sources the amount of protein in the ordinary diet of an active adult may be safely reduced to 50 gm. per day, of which as little as 5 gm. may be in the form of animal protein. Protein requirement is not increased in exercise, and physical fitness and efficiency are not impaired or improved on low-protein diets adequate in other nutrients. Substituting protein for some of the carbohydrate in the common American breakfast is a feasible way to prevent midmorning symptoms of fatigue. High-protein diets are not harmful to the normal adult and are of definite therapeutic value in many diseases and particularly in convalescence. Certain less common protein foods exist which are of high nutritional value, and which could be used with considerable value in postwar feeding operations. Protein foods are excellent sources of nutrients other than protein, and we cannot reduce the protein of a diet unless at the same time we provide the other essential factors contributed by protein foods.

ANNALS OF INTERNAL MEDICINE

Vol. 72, December 1943

*Clinical significance of glycogen content of liver. M. Korenberg.—p. 746.

Glycogen Content of Liver. As glyogen reserves in the liver are depleted, breakdown of fats and proteins therein gives rise to ketone bodies and dextrose. A determination of hepatic glycogen gages a patient's susceptibility to ketosis. Administration of phlorizin when the hepatic glycogen is inadequate causes a diminution of blood sugar and a possible ketonemia. This induced reaction is exactly like the hepatic depletion of glycogen in hyperthyroidism and in insulin insufficiency. Diabetics have a decreased hepatic glycogen; since ketosis is the major factor for the development of diabetic coma, a check of liver glycogen could prevent severe ketosis. Drawing conclusions from experiments conducted, administration of phlorizin may eventually be used in diagnosis of latent diabetes as well as the severity of diabetes mellitus.

ARCHIVES OF INTERNAL MEDICINE

Vol. 19, December 1943

*Thiocyanate goiter in man. R. W. Rawson and J. H. Means.—p. 829.

Thiocyanate Goiter. Hyerplastic goiters have been produced experimentally in rabbits maintained on cabbage diets and by administration of potassium thiocyanate. Evidence is lacking to prove that cabbage and thiocyanate goiters are produced by identical mechanisms, but a report from a central European community showed large goiters occurring endemically where cabbage is the principal dietary item. Case reports of hypertensive patients treated with thiocyanate show goiters developing after the medication was begun and ceasing to increase when iodine plus thiocyanate was administered. Thiocyanate goiter can probably be prevented by prophylactic doses of iodine.

ARCHIVES OF PEDIATRICS

Vol. 60, December 1943

*Preschool day care (concluded). J. F. Landon and H. Thompson.—p. 665.

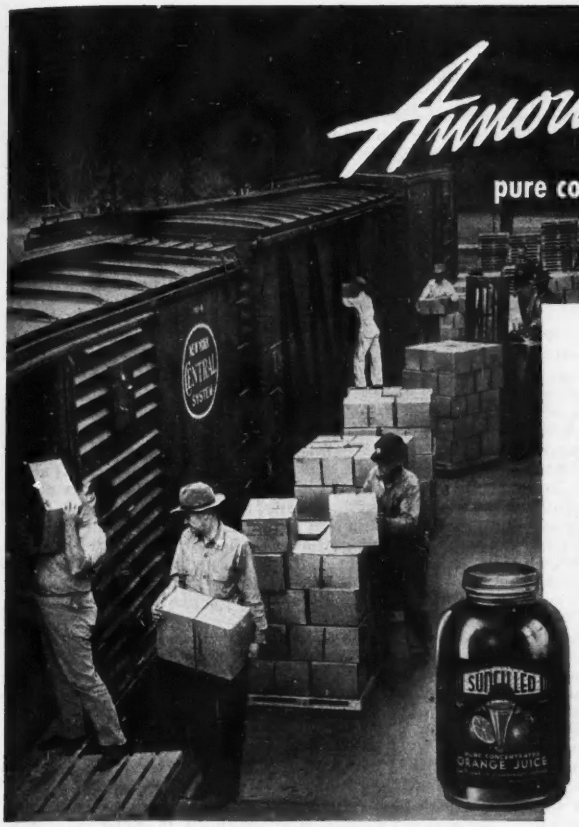
Preschool Day Care. In the second of 2 comprehensive articles on this subject a section is devoted to a case study of an interesting eating problem.

BRITISH MEDICAL JOURNAL

No. 4328, December 18, 1943

*The renewal of civilization problems of feeding Europe. Editorial.—p. 789.

Problems of Feeding Europe. The Family Relief Committee in London has issued a report on conditions in Belgium. The calorie value of the diet is 1280, about half that obtained during the last war when Belgium was also an occupied country. One of the striking evidences of dangerous undernutrition is the occurrence of hunger edema. Another report gives the daily ration as about ½ lb. poor-quality bread, a few potatoes, and occasionally a tiny piece of meat. In Czechoslovakia the rations are deficient in energy value by 500 to 800 calories, as well as in proteins and vitamins, especially A and D. In Greece there are intense famine periods separated by lulls when shipments of food arrive. Continued malnutrition has resulted in a great increase of malaria, hunger edema, and tuberculosis. UNRRA should have power to acquire stocks and to control shipping and internal transport. After the last war the food given was not based on physiological needs but was mainly what happened to be surplus.



Announcement...

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A favorable crop outlook and our greatly expanded production facilities now permit us to satisfy the demands of our armed forces and again supply our old and prospective customers with widely acclaimed, true-to-fruit Sunfilled products.

We are confident that former users of Sunfilled concentrated juices will welcome the return of these unexcelled quality products. Prospective users will appreciate the time, money and space saving advantages they afford. By the simple addition of water as directed, juices are ready for serving. They faithfully approximate the flavor, body, vitamin C content and nutritive values of freshly squeezed juices of high quality fruit.

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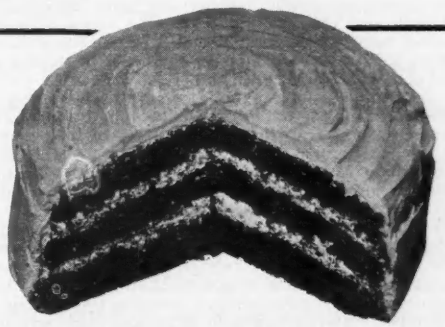

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CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 49, October 1943

*Riboflavin and vitamin A in relation to "eye strain." L. B. Pett.—p. 293.

Vitamins and Eye Strain. In 232 persons doing constant reading under uniform conditions observations have been made of the incidence of presumed deficiencies of vitamin A and riboflavin. Treatment produced a small effect (12%) by vitamin A, and a large effect (57%) by riboflavin. The latter is offset by the large number (42%) of diagnosed riboflavin deficiencies which cleared up without treatment during 3 months. Among the remainder, subjective improvement in "eye strain" was slightly more common than in the other groups. The importance of suitable controls thus receives new emphasis in the current discussion over this biomicroscopic method of diagnosis.

FOOD RESEARCH

Vol. 8, November-December 1943

*Thiamine determination by the fungus-growth method and its comparison with other methods. K. C. Hammer, W. S. Stewart and G. Matrone.—p. 444.

*Control of oxidative flavors in beverages. C. A. Shillinglaw and M. Levine.—p. 453.

*Vitamin A activity of lean meat and fat from cattle fed various levels of carotene. C. A. Cabell, N. R. Ellis and L. L. Madsen.—p. 496.

Thiamin Determination. Discusses a method of determining thiamin in plant material by measuring the growth of the fungus, *Phycomyces blakesleeanus*, on extracts of these materials, and furnishes details of procedure for adapting this method to the routine analysis of large numbers of samples. Comparing determinations by this method and by the rat-curative method, a difference of 3.6% in thiamin content of "tomato fruits" and 8.5% in wheat grains was found. On meats, the new method gives consistently higher results than the thiochrome method. Thiamin determinations by this method on many samples of wheat indicate consistent results with a low error.

Control of Oxidative Flavors in Beverages. The rate of absorption of oxygen by orange juice in the presence of ascorbic acid was increased by pasteurization. Presence of iron, and particularly copper, very markedly increased the rate of absorption of oxygen by orange juice to which ascorbic acid had been added. Incorporation of vitamin B_1 in an orange beverage distinctly accelerated the rate of loss of flavor and resulted in the development of bad taste and a characteristic musty and rubbery odor. Addition of ascorbic acid to true-fruit orange and grapefruit beverages, in concentrations in excess of that required to take up the free oxygen in the container, distinctly increased the period of retention of the normal taste and flavor. Whether or not the addition of ascorbic acid increases the keeping qualities of beverages sufficiently to make the practice commercially feasible would probably be determined on economic grounds. The results obtained indicated clearly the importance of keeping oxygen away from beverages containing fruit juice, in all stages of their manufacture.

Vitamin A Activity of Meat From Cattle Fed Carotene. Results of biological assays for vitamin A content of edible fat and lean tissues from beef cattle fed controlled rations, varying widely in carotene content, are reported. Values for biologically-active vitamin A in beef fat ranged from 660 I.U. per 100 gm. for pasture-fed cattle to 33 I.U. for cattle fed a relatively low carotene level. Roasting beef fat destroys some of its potential vitamin A activity. Carotene intake of cattle is a controlling factor in the vitamin A content of edible beef cuts, including both fat and lean portions.

HOSPITALS

Vol. 17, November 1943

Commodity price trends. Comparing the records in two periods of war. McGill Commodity Service, Inc.—p. 22.

*Clinical medicine today, and nutrition—A report on the effects of recent progress. E. C. Beck.—p. 36.

Dietitians train for war duty. Major H. C. Burns.—p. 38.

Submit report on rationing of food for special diets.—p. 118.

Vol. 17, December 1943

*See little chance to escape 1944 controls even though Germany collapses soon. McGill Commodity Service, Inc.—p. 80.

Recent Progress in Nutrition. This article summarizes recent clinical progress in nutrition in an interesting and concise fashion.

Commodity Price Trends. The tendency will be toward a tightening in rationing of staple food products. Reflecting inevitable increases in producing costs, there is no alternative other than to revise upward price lists in a moderate manner, at least to sufficient levels to encourage maximum production. Strong control measures will continue in force for an indefinite period.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 123, December 25, 1943

*The clinical significance of the plasma vitamin A level. H. Popper and F. Steigmann.—p. 1108.

*Medical aspects of juvenile delinquency. Editorial.—p. 1118.

*Isotopic studies and protein metabolism. Editorial.—p. 1118.

*Patulin for the common cold. Current comment.—p. 1120.

Vol. 124, January 8, 1944

*Absorption of insulin labeled with radioactive iodine in human diabetes. H. F. Rott, J. W. Irvine, Jr., R. D. Evans, L. Reiner and T. M. Carpenter.—p. 84.

Vol. 124, January 29, 1944

*Fetal and neonatal mortality in pregnancies complicated by diabetes mellitus. H. C. Miller, D. Hurwitz and K. Kuder.—p. 271.

Plasma Vitamin A Level. The chemical determination of vitamin A in the blood has been simplified so that it can be carried out in any clinical laboratory. Apart from the changes of the plasma vitamin A in nutritional vitamin A deficiency there are well defined variations of the plasma vitamin A content in many diseases. These variations, not related to nutritional deficiency, appear more interesting since secondary, conditioned or endogenous vitamin deficiencies (due to processes within the organism) are as significant in medical practice as primary or exogenous due to reduced nutritional intake. Many months are required to decrease significantly the blood vitamin A level of normal adults by withdrawal of vitamin A from the food, whereas the carotene level begins to drop sooner. Prolonged malnutrition reduces the vitamin A level; among the poorer part of the population the blood level is usually lower than in the economically better stratum. Not much is known as to the blood vitamin A level; in clinical nutritional avitaminosis A in deficient animals it is reduced. In individuals with signs of vitamin A deficiency the vitamin A level is not necessarily lowered. On the other hand the intake of large doses of vitamin A increases the blood level temporarily. In conditions associated with disturbances of intestinal absorption, low plasma vitamin A levels are common (celiac disease, sprue, colitis, pyloric obstruction, pancreatic fibrosis and congenital atresia of bile ducts, intestinal obstruction, severe pulmonary tuberculosis, and infantile eczema). An increased demand for vitamin A is still a question except in pregnant and lactating women. Increased demands are presumed in hyperthyroidism and infections and in choledochocolonostomized rats. Normally, the blood vitamin A level is maintained by the liver, its chief depot in the body. In pathologic conditions this regulation may fail, as in penumonia and liver damage. The plasma vitamin A level is also lowered in various other conditions (anemia, gastrointestinal carcinoma), especially in severely sick patients. The reduction of the plasma vitamin A level in the latter renders it a nonspecific index of the general condition. In kidney disease the vitamin A level is often much decreased. "Hypovitaminemia A may rapidly develop and is in this country more commonly caused by processes within the body than by faulty nutrition."

Juvenile Delinquency. The term "juvenile delinquency" is applied somewhat loosely to cover both indictable offenses and serious deviations from the moral code by boys and girls under the age of legal maturity. The broadness of this definition is evidence of the unscientific approach to this problem that frequently characterizes public discussion. There should be a sharp differentiation between the cases of delinquency that result from definite physical or mental disease or deficiency and those that occur in ostensibly normal juveniles. The feebleminded cannot be placed with the psychopathic. Only the experienced physician is in a position to do this sorting and to prescribe proper measures of physical and social prophylaxis.

Protein Metabolism. The heavy isotope of carbon, of hydrogen and of nitrogen as well as the radioactive isotope of sulfur have been useful as markers of particular amino acids. These isotopic "tags" serve, figuratively speaking, as little red lanterns that permit the tracing of their bearers in the animal body. Thus, it has been demonstrated that aminoacetic acid (glycine), arginine and methionine may act as the precursors of creatine in the animal body. Another special phase of protein metabolism to which the isotopic technique has been applied concerns the apparent conversion of administered amino acids to carbohydrate in experimental animals. There are many other problems relating to the metabolism of protein and amino acids that have been profitably studied with the aid of isotopically marked amino acids. Perhaps the most striking contribution of these investigations is the definite proof of the dynamic state of body protein. The classic theory of the more or less static state of body protein is no longer tenable. Most tissue proteins are apparently constantly undergoing synthesis and degradation.

Patulin for the Common Cold. Recent reports from London describe work with a metabolic product of penicillium called

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"patulin" for the common cold. A high proportion of the persons treated seemed to show recovery in a much more rapid and complete fashion than would have been expected without treatment. Pending further studies "it would be unwise to view this new form of treatment of colds with too much optimism."

Diabetes. Extraordinary differences in the rate of absorption of injected insulin can be demonstrated in different diabetic patients. The cause of delayed insulin absorption is not related to long duration of diabetes but is resident in the tissues at the site of injection and tends to be corrected by the continued use of insulin in amounts large enough to control glycosuria and hyperglycemia. A comparison of the rates of insulin absorption from the standpoint of differences in the structure of the tissues used for injection, with particular reference to the disappearance of insulin pads and of areas of fatty atrophy, suggests the hypothesis that in cases of insulin resistance which is associated with pronounced delay in insulin absorption, the metabolic or structural changes in diabetic tissues take place under the influence of some factor such as a disturbance in hormonal and enzyme relationships.

Diabetes. In pregnancies complicated by diabetes mellitus the fetal and neonatal mortality is about 5 times higher than that in nondiabetic pregnancies. An increased fetal and neonatal mortality can be observed from 15 to 20 years before the clinical symptoms and signs of diabetes can be recognized. In the presence of mild diabetes (not requiring insulin) and in the absence of maternal complications of pregnancy the fetal and neonatal mortality is 4 times higher than that in the nondiabetic population. Severe complications of pregnancy in women with diabetes increase the risk to the infant. The presence of glycosuria in the last months of pregnancy in women whose carbohydrate metabolism is otherwise apparently normal is associated with a fetal and neonatal mortality that is as high as that among the offspring of women with definite diabetic signs and symptoms.

JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 151, December 1943

*Synthesis of coenzyme and factor V in erythrocytes, and the excretion of nicotinic acid derivatives in the urine following ingestion of nicotinic acid and nicotinamide. C. L. Hoagland, S. M. Ward and R. E. Shank.—p. 369.

*The biochemical defect in nicotinic acid deficiency. II. On the nature of anemia. P. Handler and W. P. Featherston.—p. 395.

*A new method for the bioassay of antiscorbutic substances. Assays of dehydroascorbic acid, 2-ketogulonic acid, iron ascorbate, and the effectiveness of oral and parenteral administration of ascorbic acid. B. S. Gould and H. Shawachman.—p. 439.

*The chemical determination of thiamine and cocarboxylase in biological material. B. Alexander.—p. 455.

*Evidence for the totally asymmetric synthesis of amino acids in vivo. D. Shemin and D. Rittenberg.—p. 507.

*Effect of tocopherols on phosphorus metabolism. L. H. Weissberger and P. L. Harris.—p. 543.

Nicotinic Acid and Nicotinamide. Results of this study point clearly to differences in the manner in which nicotinic acid and nicotinamide are metabolized in the human organism.

Anemia of Nicotinic Acid Deficiency. Dogs fed 3 different diets deficient in nicotinic acid have been observed to develop a profound macrocytic anemia. A sharp reticulocyte response and subsequent elevation of red cell count and hemoglobin concentration were noted after administration of nicotinic acid and nicotinamide. Administration of iron, protein, glucose, hemoglobin, anti-pernicious anemia factor, xanthopterin, and excessive amounts of cobalt was without any effect. A tentative mechanism for the hematopoietic failure is discussed.

Ascorbic Acid. A study has been made of the relative effectiveness of oral and parenteral administration of ascorbic acid which suggests a loss of 27% when the vitamin is fed by mouth.

Thiamin and Cocarboxylase. By simultaneously measuring the free and total thiamin on aliquots of the same material, a value for the phosphorylated or cocarboxylase fraction may be obtained. Only very small amounts of free thiamin can be found in animal tissue and it represents but a small portion of the total thiamin. The concentration of total thiamin and cocarboxylase in the tissues can be increased somewhat by parenteral administration of this vitamin. Significant amounts of thiamin are present in human feces and these amounts may be increased by oral or parenteral administration of this vitamin.

Amino Acid Synthesis. No synthesis of either α-glutamic acid or α-tyrosine can be demonstrated in the vitamin B_2-deficient rat.

Tocopherols in Phosphorus Metabolism. Until further work is done to elucidate the metabolic effects of vitamin E deficiency and overdosage, it is concluded that both conditions bring about an over-all increase in phosphorus turn-over.

JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

November 1943

*Serologic reactions in nonsyphilitic individuals. M. E. Barnes, I. H. Borts, C. I. Miller and M. Pearl Spanswick.

Serologic Tests. Evidence is presented which indicates that a high-protein diet may affect serologic findings. Individuals, in all of whom the serologic reactions were positive for syphilis, underwent complete or partial reversal in a series of consecutive tests after being placed on a low-protein (meat and milk-free) diet.

MILBANK MEMORIAL FUND QUARTERLY

Vol. 22, January 1944

*Medical evaluation of nutritional status. Part XV. Caloric intake of high school students in New York City. D. G. Wiehl.—p. 5.

A study of mobility among tuberculous households in Upper Harlem. S. Preas and J. Downes.—p. 41.

Social medicine; Its meaning and its scope. J. A. Ryle.—p. 58.

Caloric Intake of High School Students. Examination of the caloric content of diets of high school students from families of relatively high income as compared with that of students from low-income families, indicates that variation in calorie need among students is so great that no average requirement can be considered reliable for evaluation of the adequacy of an individual's caloric intake. Students in the high-income group received, on the average, the energy value needed, but those in the low-income group, especially boys, had an average caloric intake below their estimated requirement. Estimates of energy requirements based on detailed histories suggest that most urban high school students do not need as many calories as have been recommended for these ages.

PUBLIC HEALTH REPORTS

Vol. 58, December 10, 1943

Emergency minimum sanitation standards. Sanitation Code.—p. 1795.

Vol. 58, December 24, 1943

*The use of curtain walls in ratproofing. R. Porges.—p. 1881.

Ratproofing. Curtain walls are used in ratproofing to enclose areas to prevent ingress of rats. Actual results have been discussed in order to illustrate the value of various types of walls and to present an effective modification for routine procedure. For routine rat-stoppage procedure, it is suggested that the 24-inch L-shaped curtain wall be utilized.

SCIENCE

Vol. 98, December 3, 1943

*Emotions and gastric function. H. G. Wolff.—p. 481.

*Disease resistance and diet. Science News.—p. 12.

Vol. 98, December 10, 1943

*Retardation of rancidity by sulfydryl compounds. P. György, E. T. Stiller and M. B. Williamson.—p. 518.

*Vitamin B_6 deficiency anemia in the dog. S. G. Smith, R. Curry and H. Hawfield.—p. 520.

*Seasickness. Science News.—p. 8.

*Eyeglasses and diet. Science News.—p. 10.

Emotions and Gastric Function. Increased secretion, increased motility and disturbed circulation, mucosal erosions and ulcerations are phases of the same process differing only in the amount of tissue destruction in the stomach and duodenum. The degree and duration of changes in gastric function are roughly proportional to the intensity and duration of the emotional reaction. Adequate neural mechanisms exist to explain these phenomena. One may infer that these emotionally charged situations are involved directly in the genesis of peptic ulcer in man.

Disease Resistance and Diet. Studies by Mills and Cottingham show that when mice, rats and guinea-pigs were starved of vitamins to a point where they failed to grow properly, the activity of their phagocyte cells was reduced. These cells fight off infection by disposing of disease germs. Reduction in phagocytic activity was found in animals deficient in thiamin, riboflavin, pyridoxine, pantothenic acid, choline, and vitamin C or a combination of vitamins A and D. Vitamin deficiency does not affect antibodies directly. Discovery of reduced phagocytic activity in vitamin deficiency may give a valuable means for detecting subclinical vitamin deficiencies.

Retardation of Rancidity by Sulfydryl Compounds. Biological antioxidants, as food constituents, are attracting increased attention. Apart from tocopherols, crude sources of the vitamin B complex have been recognized as potent antioxidants. Thiourea

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has been shown capable of acting as a fat antioxidant in the presence of water. This phenomenon may shed light on the mechanism underlying the hypometabolic state in rats fed certain sulfonamides as well as thiourea and its derivatives. Thiourea and thiouracil have been found to be effective also in thyrotoxicosis in man. The enhancing effect of *p*-aminobenzoic acid on sulfonamides in the retardation of rancidity in fat has recently been experimentally demonstrated.

Vitamin B_6 Deficiency. From experimental data presented it is concluded that even though a diet lacking in vitamin B_6 results in a typical hypochromic anemia in dogs which responds specifically to vitamin B_6 treatment, vitamin B_6 alone or even in combination with the known synthetic factors of the B complex is not sufficient to maintain the hemoglobin at optimum levels. There is at least one factor, possibly more, in brewers' yeast in addition to vitamin B_6 which serves to stimulate hemoglobin production in the dog.

Seasickness. A combination of atropine and prostigmine acting together may prevent seasickness. Neither of these drugs would be effective alone. The drugs prevent nausea, apparently, by blocking inhibition of stomach contractions.

Eyeglasses and Diet. A world of the future in which no one will need to wear eyeglasses because the mothers of the race will eat a superior diet was predicted by Dr. R. M. Wilder. Nutritional scientists are finding that in rats the growing old process can be delayed by proper diet. Changes in the eyes due to aging might similarly be prevented. The eyes may even help in finding more ways for postponing aging and preventing not merely disease but poor health because the eyes can be examined internally and externally during life.

AMERICAN RESTAURANT MAGAZINE

Vol. 27, November 1943

Educational possibilities. L. M. Boomer.—p. 28.
*Meal planning in war time. S. R. Williams.—p. 30.
*Proper cooking methods mean more meat. J. A. Cline.—p. 35.
*Hotpoint feeds 'em quickly and well.—p. 39.

Vol. 27, December 1943

*Planning for profits. N. S. MacIntosh.—p. 12.
*Meals and morale. R. M. Thompson.—p. 28.
In our place the customer is not always right . . . but our employes are!—p. 32.
*Moist heat methods. J. A. Cline.—p. 34.
From hotel to cafeteria. J. James.—p. 42.

Meal Planning. The meal planner, in spite of government restrictions and shortages, must have attractive and nutritious meals that will not exceed the food budget. Menus, more than ever, must be simplified and planned from the standpoint of ease of production, and the capacity of kitchen and serving stations kept constantly in mind. Fewer items on the menu help both the kitchen workers and the salesgirls. Ration points should be checked daily as carefully as the bank account. If a new dish does not sell at first, improve it if possible and try it again. Meatless and meat extender dishes should, of course, be stressed. In using soybean products it is better to use too little than to overdo. An abundant crop of peanuts and sweet potatotes permits increased use. Suggested ways of solving food problems include: render all fat to cut purchase of oils and shortenings; use tomato paste and dehydrated flakes; salvage *all* lean meat trimmings; keep condiments off the table; use water in which vegetables are cooked; cut down on deep fat frying; use cauliflower leaves in vegetable dishes, also tops of beets and celery; use dry bread to better advantage; reduce to a minimum the time vegetables are in peeler; cook potatoes in jackets; watch amount of lettuce served; serve just one roll to a customer; ask guest if he wishes butter and cream; and always take employees into your confidence and recognize their loyal efforts.

Meat Cookery. Meat, whether broiled, griddle-broiled, or fried makes a better appearance on the plate and is larger, more tender, and juicier when cooked at a moderate temperature. Only tender cuts are suitable for cooking by dry heat methods. Only thin cuts of tender meats should be fried. The most important factor in deep-fat frying is the temperature.

Quick Feeding. The menus in this cafeteria are prepared two weeks in advance, with meat and meat substitutes featured on each menu. The entire cafeteria system is operated on a non-profit basis. Goods received in and issued from the storeroom are recorded with detailed information. All service, with the exception of one private dining room, is cafeteria-style. There is no set "blue plate" special, all is à la carte. The "T" arrangement of service was found quickest. The kitchen has been used as a laboratory for testing electrical equipment made in the plant.

Plans for Profits. Arrange the food on the plate with an eye to color and in an orderly manner. Vegetables should be placed with a dividing line between soft and solid items, and creamed or stewed vegetables should be served in separate dishes. The three main factors in profit planning are intelligent buying, good production, and proper portioning of foods. Casserole service is a practical way to regulate portions. The many different sizes of casseroles permit controlled service of stews, pot pies, salads, and escalloped vegetables.

Meals and Morale. When the Ingalls Shipbuilding Corp. began to build ships for the government, they had 11,000 employees who, with their families, increased the population of the town of Pascagoula by 30,000. The few restaurants and lunchrooms were inadequate so the company applied to the Maritime Commission to build a company cafeteria for employees and their families. The new cafeteria, equipped to serve 30,000 meals, includes 5 canteens distributed throughout the yard; 62 employees are needed to run this large establishment. All except the key people were trained locally. The cafeteria also serves as a recreation center.

Moist Heat Methods. Recent studies at the University of Texas have shown that it is just as important to use low temperatures for moist heat as it is for dry heat methods of meat cookery. The shrinkage which results from boiling reduces the amount of meat to be served. If the meat is boiled for a considerable length of time, the connective tissue dissolves and the meat becomes stringy and difficult to cut.

BAKER'S HELPER

Vol. 80, December 18, 1943

*The Army's baking program. C. F. Kearney.—p. 36.
*Washington and the retail baker. W. A. Quinlan.—p. 40.
*Roll make-up—here's how. W. E. Broeg.—p. 72.

Vol. 81, January 1, 1944

*Government orders in brief.—p. 48.

Army Baking. Army bakeries are classified as fixed or garrison, and field—either mobile or portable. The combined production of all Army garrison bakeries is well over 1,250,000 lb. bread per day. Garrison bakeries are not standardized in size or type. Some are new and others existed before the war. Enriched bread is prepared for all of the Army. It was decided also that the straight dough process would best fit the need for keeping processes simple, reduce the equipment needed and still produce a good loaf of bread. A further improvement was effected by making a 20-oz. loaf in pans that had been used for a 1-lb. sponge dough loaf. This loaf has better keeping qualities because of its compactness and is best suited to army needs. The Schools for Bakers and Cooks took up the job of establishing the bakeries as operating units at posts. A group of civilian bakers and bakery engineers act as field operators and visit the posts to which they are assigned at least once every 3 months. The Bakery Production Specialists are all experienced bakers with a knowledge of technique which qualifies them to find the solution to problems that might arise. The Bakery Equipment Specialists inspect machinery and equipment under actual operation. The Army purchases approximately 1 million pounds bread daily from civilian sources.

Problems of Retail Bakers. The basic allotment for sugar in the coming year will again be 80% according to OPA. WFA will probably aid bakers who make products containing 10% of sugar or less—*i.e.* the "bread and bread type" products—to obtain an increase in this allotment.

Roll Make-up. A refrigerated basic sponge dough or a white, soft roll dough is suitable for Parker House, knots, sandwich buns, and many other types of rolls. In making a plain knot roll, the pieces of dough are first separated from the bun divider. A number of pieces are shaped ahead to allow them to relax before starting the actual make-up. In making a plain knot the dough is wrapped around three fingers and the ends are brought through to make a knot. To make the twist varieties the dough is rolled out long and with a double hand motion on the ends, *i.e.* the operator rolls one hand away and the other toward him. The dough is then doubled without allowing it to untwist and when the ends are brought together it will automatically twist. The twist knot is made in the same way as the plain knot, but twisted dough is used. In making a double knot, loop is made around three fingers of each hand. The loose end is grasped and both knots drawn through at once.

Government Orders. A ceiling of 10 cents per pound, or 12½ cents retail, has been placed on bread crumbs. There will be a slight reduction in the cost of edible tree nuts as ceiling prices have been levied; walnuts, almonds, filberts, and pecans are the most important of these. Supplies of eggs for civilians in the last quarter of 1943 were largest on record for the same period in other

The Basic Function of Vitamin C

Man's battle against scurvy antedates the science of nutrition by many years. A study of primitive food customs reveals continuous search for the essential dietary element we now know as vitamin C. The Algonquin Indians, for example, found it in the eyes and glandular organs of game and thought of "deer eyes" as a powerful medicine. Others made unappetizing decoctions of pine needles and leaves when fresh fruits and berries were unavailable.

Of course, none of these primitive people understood the biochemical significance of the antiscorbutic vitamin. They knew only from experience that "gums would bleed," "teeth would become loose," and "joints would ache," unless dietary precautions were taken. Today, the science of nutrition has given us a clear picture of what happens when the diet is lacking in vitamin C.

Basically, vitamin C functions in producing *collagen*—the intercellular cement substance that holds the individual cells of the body together. The anti-infective value of vitamin C, therefore, hinges upon this basic function—that of maintaining the integrity of the tissues of the body. When vitamin C is lacking, scurvy sets in with all its classic symptoms: hemorrhages of the gums, easy bleeding, loosening of teeth—all permitting access to bacterial invasion.

This same function underlies the value of vitamin C in promoting the rapid healing of wounds, particularly those occasioned by surgery. Laboratory tests confirm the clinical observation that wounds of scorbutic subjects are diffi-

cult to heal and that rapid healing, through adequate *collagen* growth, can be promoted by holding the patient's vitamin C metabolism at a high level.

Oranges are our most practical source of vitamin C

Nutritionally, all oranges are a good source of vitamin C. But there is a difference in the value of the juice of oranges grown in different parts of the country. Here are the findings on vitamin C, from a report by the Bureau of Home Economics, U. S. Department of Agriculture:

VITAMIN C (Ascorbic Acid)

Test Material	No. of Samples*	Ascorbic Acid per 100 Ml's.		
		Hi.	Low	Av.
			Mgs.	
ORANGES—				
California Navel	15	68	50	58
ORANGES—				
X variety†	7	53	38	45

*6 tests per sample.

†Represents largest percentage of oranges from other producing area.

In addition, California Oranges are a good source of vitamin A and supply valuable amounts of vitamins B_1, B_2(G); calcium and other needed minerals.

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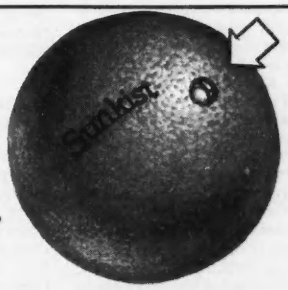


THE NAVEL MEANS SEEDLESS

California Navel Oranges contain no seeds. They're easy to peel, slice and section. Those marked Sunkist are the finest oranges from over 14,500 cooperating California-Arizona growers.

years. Should the weather be favorable in the corresponding months of 1944 total egg output will reach an even higher level. Lard stocks are still plentiful, even though general shortening supplies are still tight.

HORWATH HOTEL ACCOUNTANT

Vol. 23, December 1943

The trend of business in hotels.—p. 3.
*War-time trend in labor turnover.—p. 5.

Labor Turn-over. The labor situation did get worse this year, but not to the extent which might have been expected. The relatively moderate increase in turn-over is undoubtedly due to the fact that many workers are clinging to peacetime jobs, in expectation of a sudden end to hostilities in Europe. Another reason for the less rapid turn-over in hotel employees than would have seemed likely may be due to the current tendency to employ men over draft age and to place women in positions formerly filled by young men.

HOTEL MANAGEMENT

Vol. 44, November 1943

*Cooking from the inside out. A. G. Mezerik.—p. 22.
How we simplified our payroll problems. R. Davis.—p. 27.
*Remodeling with tile to meet the critical materials shortage. E. B. Morris.—p. 30.
How an unprofitable grill was converted into a highly profitable coffee shop. R. T. Huntington.—p. 32.
High-profit recipes for low-point meats. L. P. DeGouy.—p. 34.

Vol. 44, December 1943

*What does brand maintenance mean to post-war employment. E. H. Gardner.—p. 19.
*Cereals take the spotlight. A. Easton.—p. 22.
*Should our government go into the mass feeding business. A. M. Snapper.—p. 26.
Remodeling with non-critical materials that can be salvaged on the spot. R. C. Taylor.—p. 28.
High-profit recipes for low-point meats. L. P. DeGouy.—p. 30.

Electrons. Electrons have already been put to use in the food industry through the use of electric eye doors and fluorescent lighting. In the near future we will be using electronic devices to collect dust, in refrigeration, to kill harmful bacteria, and for cooking by induction heating, which means that heat generates from the interior. Electron tubes will stand guard against fire and burglary.

Remodeling. Clay tile, which is not classed as a critical material, can be used in hotels for wainscoting or floors, for new tubs or fronts of old tubs or in sun parlors, lobbies, and cocktail alcoves, at an approximate cost of 60 to 65 cents a square foot of floor, or 70 to 75 cents for walls.

Brand Maintenance. Large war contracts were awarded to companies known for their brand names which had been promoted by selling and advertising. Business leaders consider the brand name largely responsible for a given company's size and success. Among the advantages of the brand system are better products, lower prices, greater variety and more new products brought within popular reach, a higher standard of living, higher wages for workers, and minimum regulation and regimentation.

Cereals. Cereals are plentiful, unrationed, and inexpensive, easily prepared, readily digested, and nourishing. Many can be employed as meat extenders. Green or dry soybeans should not be considered as a vegetable in planning the menu, but as a protein food like meat or eggs. Soybean sprouts, however, deserve grouping as a vegetable and when properly cooked are an important source of vitamin C. Soya flour may be used in breads, pancakes, soups, stews, etc., soya flakes, to fortify cooked cereals.

Mass Feeding. The problem of public feeding which the British faced after the beginning of the bombings was gigantic. People subjected to bombing were in a shocked condition which eliminated the desire for solid food. In the first 12 hours they wanted only hot tea or soup, and for 12 hours thereafter only light nourishment with their beverages, such as a bun or bread. After that they wanted regular meals. Mobile kitchens could supply the tea or soup, but not the solid food. The few school kitchens left were used to supplement mobile kitchens as well as a large number of field kitchens left after the fall of France. These were set up in alley-ways, schools, halls, and even churches. In 1940, food assumed a position of utmost importance in the defense of Britain. Rations had become increasingly scarce. The restaurant industry was not organized for supplying food at low cost to meet the new need. Therefore, the London County Council established over 2000 "British Restaurants" which serve about 700,000 midday meals each day. The menus include light snacks, hot drinks, and main meals. The administration of these meals is entrusted to local authorities. The Ministry of Food advises them concerning setting up a restaurant which is expected to be self-supporting and to show enough profit to pay the original cost within a certain number of years. Some of the restaurants have paid staffs and others voluntary aids. Equipment is of the most utilitarian type. The restaurants send out snacks and sandwiches to local workers, and many supply children's meals at reduced prices.

HOTEL MONTHLY

Vol. 51, December 1943

Part-time labor helps solve personnel problem. G. P. Chipman.—p. 23.
*Smarter planning of menus and greater simplification of service. J. L. Hennessy —p. 37.
*The use of soy flour in hotel kitchens and bakeshops.—p. 43.

Menus and Service. The most difficult task is to convince guests and some employees that the variety of items on menus must be drastically curtailed. The Statler no longer sells breakfasts in only two price groups, but prices each breakfast in line with its cost and value. To simplify service they use plate service instead of elaborate silver service. As many as possible of the extra dishes have been eliminated. Use of rationed and scarce items is watched more closely in handling, preparation, and service. Only a few dishes are prepared in advance. Fewer vegetables are used and these tend to be listed in combination with other foods. To save labor and points, the Statler has limited the number of varieties served; for example, there are fewer kinds of pies and pastries. It is necessary to be more careful in measuring servings, and to use extenders more frequently. The war should not, however, be used as an alibi for indifference or discourtesy.

Soya Flour. When properly used, soya flour makes a bread that is more moist, stands up better, and resists drying. "Vivasoy" restaurant grits, when used with meat, take on the flavor of the meat. Both the flour and grits are good in casserole dishes. The new flours and grits contain less than 1% fat and resist rancidity and spoilage. Soya flour in rolls reduces the amount of milk and shortening needed. Two tablespoons soya flour to each cup of wheat flour makes a mix suitable for use in practically any recipe in place of an all-wheat flour.

ICE CREAM TRADE JOURNAL

Vol. 39, December 1943

*War rulings affecting the ice cream industry. B. Terhune.—p. 20.
*Tips on selling sherbets. F. Yoars.—p. 22.
*Manufacturing problems. P. H. Tracy.—p. 40.

War Rulings. The temporary regulation on price ceilings and butter fat will likely remain. Butter fat cannot be reduced more than 2½% without a cut in price. The ceiling on corn will determine the milk production for 1944. The critical paper situation will be felt by the ice cream industry in a shortage of cups and cartons. Although there is a rise in the amount of cocoa beans, the ice cream producer will still be rationed. Manpower will continue to be the main cause of the fruit shortage.

Sherbets. A good sherbet can readily compete with much of the ice cream on the market today. The body must be firm, texture close, and flavor characteristic. The Best Ice Cream Co. makes only vanilla ice cream using all other flavorings in sherbets.

Manufacturing. It would be impossible to make a satisfactory ice cream from an unhomogenized mix. An ordinary fruit ice formula can be used for sherbet by adding mix or condensed milk. A temperature not higher than 160° F. is satisfactory to destroy bacteria and to dissolve gelatin. A satisfactory milk ice may be made using 3.5% fat and 11% serum solids.

JOURNAL OF HOME ECONOMICS

Vol. 35, December 1943

The sales tax in wartime. R. E. Paul.—p. 614.
*Cafeteria instruction training. M. J. Singleton.—p. 631.
Simplifying home preparation of potatoes. M. K. Heiner.—p. 646.

Vol. 36, January 1944

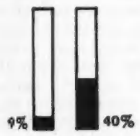
*Palatability studies on home-dehydrated vegetables. J. T. Stillman, B. T. Watts and A. F. Morgan.—p. 28.

Cafeteria Instruction Training. Due to wartime employment problems, employees in food services must be drawn from groups of people with little education and no experience in this type of work, especially in the operation of a large cafeteria. The inefficiency of untrained personnel and the swiftness of labor turnover made some form of training imperative. Cafeteria instruction training was accordingly initiated. The War Manpower Commission has been responsible for training within industry programs. Job instruction and job relations training are taught to managers and supervisors. In the Remington Arms plant there

#12 This is part of a series on matters of professional, educational and public interest, primarily related to nutrition and the scientific approach to the food problem, and giving the background of the products of General Mills. These messages are being disseminated through a number of professional and specialized publications... in the hope of providing material useful for the readers.

What is the national nutritional significance of flour enrichment and cereal restoration?

"The increase in the vitamin and mineral requirements of enriched flour . . . will be of far-reaching benefit to the people of the United States." CLAUDE R. WICKARD, *Sec'y. of Agriculture*



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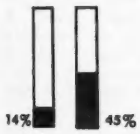

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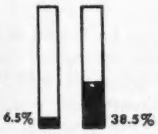

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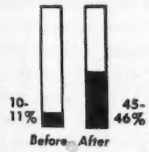


IRON

VIEWED from the standpoint of the national economy as a whole, foods made from our common grains translate nature's bounty into human nutrients more economically than any other major class of foodstuffs. More than a third of the world's food energy and protein requirements are supplied by cereal grains. In this country, the percentage is slightly less.

Prior to the nutritional discoveries of recent years, and in response to popular demand for more appealing and appetizing forms of cereal foods, many of the principal forms in which this country's cereal grains have been consumed have been those in which, in consequence of the necessary processing, certain of the vitamin and mineral virtues of the original grain have been lost. The vitamin and mineral contribution of such foods has, therefore, not matched their contribution in food energy and protein.

For many years research has wrestled with this problem. The stimulus of the defense program and the discovery—and availability—of certain vitamins in pure form has made possible the correction, in large measure, of this situation. And today, enriched flour and restored cereals are available in every part of the country.

The bars at the left are interesting in this connection. They show the percentage of three B vitamins and iron contributed to the average normal diet* by flour and cereals in the days before flour enrichment and cereal restoration and now.

These bars demonstrate that, thanks to enrichment and restoration, the contribution of flour and other cereal foods in these essential B vitamins and iron is greater than their contribution of food energy and protein.

These are the facts behind the enthusiasm of nutrition authorities for the enrichment program.

Studies have indicated that large numbers of persons do not get adequate quantities of the "protective" B vitamins and iron which enriched flour and restored cereals now supply. The availability of these nutrients in such common foods strikes an effective blow in the interests of better national nutrition, and is accordingly important both for the war effort and the future health of the nation.

PROTEIN

CALORIES

*Figures based on 2800 calorie prewar diet . . . assuming our cereal consumption consisted wholly of enriched flour and bread and whole-grain or restored cereals. Current enrichment levels used, and all data adjusted for average losses in cooking.

General Mills, Inc.

Minneapolis, Minn.

"Kitchen-tested", Bisquick, Wheaties, Cheerioats, Kix, Drifted Snow, Red Band are reg. trade marks of General Mills, Inc.

***All our family flours are enriched to new, higher gov't. standards, our ready-to-eat cereals restored to whole grain levels. These brands include:* GOLD MEDAL "Kitchen-tested" FLOUR, DRIFTED SNOW FLOUR *(in the West)*, RED BAND FLOUR *(in the South)*, BISQUICK *(containing enriched flour)*, WHEATIES, CHEERIOATS, KIX.**

are three major instructors: one handles the supervisory training, another the bakers' training, and the third the chefs' training. All the key workers receive training. In the interdepartment classes each work group meets with the supervisor half an hour daily. Much detailed training is thus accomplished. Each worker is supplied with a list of duties for which he is responsible.

Palatability of Home-Dehydrated Vegetables. All vegetables, with the possible exception of spinach, were much more palatable if blanched long enough to destroy peroxidase before dehydration. Many were practically inedible if this preliminary process was omitted. The blanching could be done either by steaming or by boiling briefly in water or a salt solution, but the steam blanch is undoubtedly to be preferred because it increases retention of soluble nutrients. With those which discolor easily, as string beans, a short pressure blanch may be preferable. Most of the dehydrated vegetables improved somewhat in palatability when soaked before cooking. Greens, cabbage, and onions required no soaking. The vegetables should be covered with water during the entire soaking period. It is probably best to cover at the beginning and add more water if necessary after one-half to one hour's soaking. The soaking water should be used in the cooking and may be evaporated to a small volume during the cooking process. Spinach and broccoli stored well, while carrots deteriorated markedly. The palatability score differences were probably not great enough to justify the expense of refrigerated storage. The best of the dehydrated samples were all superior to the canned, the difference being very marked in the case of peas. Of the vegetables investigated the most promising for home dehydration were greens, peas, and corn. If properly dried, these rated practically as high as the fresh product. Broccoli, snap beans, summer squash, onions, and tomatoes dehydrated fairly successfully. Asparagus was unsuccessfully dried.

NATION'S SCHOOLS

Vol. 33, January 1944

*School lunch program. A. R. Morrill.—p. 58.
Accent on nutrition. M. H. McCaughan.—p. 59.

School Lunch. In addition to federal subsidy, Utah schools receive money from the state which is handled by the board of education and local boards. Nearly all of the school districts in Utah participate in this program. Schools receiving this benefit must serve a complete meal that furnishes one-third of the daily food needs. Lunch units must conform to state board of health requirements. Twenty of the districts canned their own food in the summer in addition to the state school lunch cannery which sells the goods at cost to the schools.

RESTAURANT MANAGEMENT

Vol. 53, December 1943

*Teaching inexperienced Army boys the art of cooking and baking. M. W. Egan.—p. 19.
A guide to the purchase and preparation of fish. L. P. DeGouy.—p. 22.
Establishing a children's nursery enabled us to employ mothers. E. Henriksen.—p. 24.
*Cereals take the spotlight. A. Easton.—p. 26.
*How British hotels and restaurants are solving wartime food problems. A. M. Snapper.—p. 28.
*Adapting a specialty restaurant to changing rationing restrictions. S. A. Lewis.—p. 30.

Army Training. Under the instruction of experienced restaurant men, inexperienced Army men are receiving excellent food training which many plan to continue later. Actual demonstration through preparation proved most effective. Informal meetings are held for discussing equipment, correcting mistakes, and presenting new ideas.

Cereals. Cereals should be used not only because they are plentiful, unrationed, and inexpensive, but because they are easily prepared, readily digested and nourishing. High-fat soya flour may be used in rolls, muffins, sweet doughs and biscuits in amounts from 5 to 15% of the weight of wheat flour, and in pastry up to 10%. In pastry the soya should be blended with the shortening, not the flour. Low-fat flour is used in bread making. Soya griddle cake mixes supply protein and ensure a golden brown crust.

British Food Problems. There are no complaints about rationing in England. The postwar British public will expect better cooking and greater variety. The health of the people has been protected as they have been taught how best to utilize what food they have. Prices are much higher than in this country. The food is monotonous except when an inspired chef adds garlic or some herb. Employees are encouraged to remain on the job by good treatment on the part of the employer and by fear of being placed in a munitions plant if idle. Coffee is being used to ease the tea shortage. There are more eating places than before the war, though some have been forced to close because of damage from the "blitz." The main hours for serving meals are between 11 a.m. and 2 p.m. Only those catering to the traveling public are permitted to serve after midnight.

Food in Wartime. Lawry's, which once specialized in prime ribs of beef, now features turkey, roast lamb, or chicken; whichever it can get. The turkey is served just the same as the prime beef, wheeled to the table in special carts and there carved. The turkeys now served are the "elite of turkeydom," and receive the same careful preparation as the prime beef formerly sold. The same standards for prewar food are held today. The average serving time per customer is still 40 minutes, as in prewar days.

Food Relief and Rehabilitation

The question as to how far to go with food rehabilitation must be answered in part in terms of what food can be spared for it from less essential uses and war production. All close followers of international history in the last few decades are agreed that . . . If there are to be no "sick" nations in Europe, each must therefore be carried clear through the rehabilitation process till it is able to stand on its own feet. This still leaves two questions: on what level of diet shall the rehabilitation be pitched, and on what degree of food self-sufficiency.

Such wisdom as the writer possesses prompts him to suggest a definitely moderate level of diet. It should be no higher than the nation itself can sustain with its own efforts when left to its own resources. This will mean, for countries like Germany, France, Belgium, Netherlands, Denmark and Norway, a diet little if any better than before this war, although easily better distributed in some of them to children, nursing and pregnant mothers, and low-income groups. For countries like Italy, Greece, Spain and the Balkan and Baltic states, not only must better than prewar distribution be achieved but some over-all raising of the level of the diet. If this is not done, too much discontent from poor nutrition will still prevail for the security of even good governments.

Obviously, if this second list of nations is to raise its dietary level somewhat during the period of rehabilitation, it must make better use of its own food-producing resources than before, or develop some procedure for obtaining the needed foods by exchange. The aid furnished by the Allied Nations must be directed toward one or both these ends, according to which seems most feasible for each country. . . . Very great care must be exercised in the use of such standards as the Recommended Daily Allowances of the Food and Nutrition Board. These are *desirable goals* and not *minimum requirements*. The Food and Nutrition Board has stated clearly that a population can live in a state of health better than prevails in most countries, possibly even the United States, if *all* the people are fed up to 70 per cent of these allowances for everything except calories of food energy. An ordinary working man needs from 2500 to 3500 calories per day in any case merely to keep his body functioning and his limbs in motion while at work. This can be supplied in large part by wheat, barley, corn, rice and other cereals, and by potatoes. Rehabilitation should be considered complete in some countries if a 70 per cent level is attained for the other food elements; in a few, an 80 to 85 per cent level could properly be set as the rehabilitation goal.

The task of raising the diet of these countries to levels above this 70 to 85 per cent, a task well worth any nation's most vigorous efforts, belongs to the post-rehabilitation years.—*Black, J. D.: Food Enough. Lancaster, Penn.: The Jaques Cattell Press, 1943.*

© Borden Co.

"GOODY, GOODY," thrilled little Beulah. "Will they be tall, dark, and handsome, mommy? Will they?"

"Nonsense, child," smiled Elsie, the Borden Cow, "they'll be Borden inspectors."

"Oh," sighed little Beulah disappointedly.

"You'll feel much better when you've made the grade with the Borden inspectors," laughed Elsie. "If they say you'll do, your reputation as a cow is made."

"Is that good?" asked little Beulah dubiously.

"It's absolutely marvelous," beamed Elsie. "For then your milk can go into Borden products such as Biolac, evaporated milk, cheese, and ice cream. And only milk that is as pure as the cleanest cows and the most careful laboratory controls can make it, is good enough for Borden products.

Now do you see why mother wants you to go to bed early on school nights?"

"Yes, darn it," complained Beulah. "I suppose you mean that: *If it's Borden's, it's got to be good!*"

—if it's Borden's, it's got to be good!

News Notes

Executive Board Meeting, A. D. A., Chicago, February 4–5. This meeting was attended by all members of the Board, including ex officio—namely, the Executive Secretary, Educational Director, and JOURNAL Editor.

A recommendation of the Finance Committee that $8500 be invested by the Association in War Bonds, Series G, was approved. Dues of members in foreign service to the extent of $840 had been waived to date.

Progress reports of the four sections were presented by section chairmen. Anna E. Boller, chairman of the Revisions Committee, submitted her report which included a recommendation that the four sections of the Association be designated as follows: Community Nutrition, Diet Therapy, Food Administration, and Professional Education.

Authorization was granted for the printing and free distribution of 20,000 descriptive folders on dietetics as a profession, which would state the requirements for Association membership and call attention to the booklet "Dietetics As A Profession" now being revised.

The Board approved the recommendation of the Editor that, in view of the rapidly increasing circulation of the JOURNAL, two summer issues, July and August, be combined in order to meet the 10% cut in the paper allotment ordered by WPB.

A three-day program was authorized for the annual meeting to be held in Chicago the week of October 23. The House of Delegates and the several boards and committees will convene on Tuesday, when registration will also begin. The formal program will be presented October 25–27 inclusive, covering three full days. Due to unforeseen circumstances the meeting will be held at the Palmer House, not the Stevens Hotel as formerly stated.

National Officers, A. D. A., Attending State Dietetic Association Meetings. Nell Clausen, President, has announced the following on her schedule of meetings: Illinois, November 15; Kansas, March 18; Wisconsin, March 23. She will attend the Oklahoma meeting April 15 and the Ohio meeting April 28–29. Maniza Moore, President-elect, attended the joint Atlanta-Georgia meeting November 27 and will go to Kentucky March 24–25. She will also address the Tennessee meeting. Helen A. Hunscher, Chairman of the Professional Education Section, attends the Indiana meeting March 17. The Missouri group on April 14–15 will have as national representative Mrs. Dorothea F. Turner, Chairman of the Diet Therapy Section.

Complete Volumes of This Journal and Back Copies Now Available. Back copies of practically all issues from Volume 10 through Volume 19 will be available at 50 cents per copy until June 1. After that date copies previous to the current volume will be available only if purchased at $6 for the volume, unbound.

The Executive Board of the American Dietetic Association at its recent meeting strongly urged that all approved training courses for dietitians make an effort to have complete bound volumes of this JOURNAL for the reference use of students in such courses.

Army Nurse and Army Dietitian Under Fire. Some of the experiences of Lt. Margaret Jennings, Army Nurse Corps, and Lt. Lois Thomas, Army dietitian, during their six months service aboard the Army hospital ship *Seminole*, are related in the *Journal* of the American Medical Association for February 5. Lieutenant Jennings stated that the ship had been blacked out awaiting the arrival of patients from the shore hospital at Naples when 25 Nazi bombers roared overhead. "As we were blacked out, they had no way of telling that we were a hospital ship and I suppose they mistook us for a troop transport. In any case, they gave us the works." Although the raid lasted an hour, there were no casualties. Another episode concerned the rising of an enemy submarine to periscope depth during a burial ceremony aboard the *Seminole*. At the approach of a merchant convoy the U-boat withdrew to attack. During the cruise to Naples the ship rescued two British and four American fliers from the sea. Lieutenant Jennings and Lieutenant Thomas praised highly the hospital installations in combat areas, which send patients to the hospital ships in excellent condition.

Promotion for Army Nurses and Dietitians. Increased grades have been allotted to positions now held by members of the Army Nurse Corps. Formerly, in a hospital unit which required 100 nurses only 1 captain and 7 first lieutenants were authorized. The new plan will authorize a lieutenant colonel, a major, 3 captains and 31 first lieutenants for the same organization. The position held by a nurse in charge of a hospital with a minimum capacity of 3000 beds will be such as to carry the relative rank of lieutenant colonel, at a hospital of 750-bed capacity the relative rank of major, and that of 500 beds but less than 750 the relative rank of captain. Regardless of capacity of the hospital, the nurse in charge will have the relative rank of lieutenant colonel if the hospital has enrolled, in addition to the authorized nurse strength, 25 or more nurses studying in one or more specified courses. The relative rank of captain for dietitians and physical therapy aides in charge of departments in 3000-bed hospitals or in hospitals conducting courses for students is covered by the authorization.

The War Department has also announced a 4-week basic training course for nurses after their entry into the Army Nurse Corps which will include digging foxholes, marching with full packs, and learning the approved Army technique for crawling over battle terrain. Instruction also includes training in sanitation and control of disease, fly and mosquito control, food inspection and mess sanitation, field water supplies and purification, waste disposal, first aid, care and management of mental patients, treatment of chemical casualties, and other medical phases of Army life.

Dietitians on Duty Overseas. Second Lt. Nancy L. Huston, 111 Station Hospital, A.P.O. 629, c/o Postmaster, New York City, in a letter to the Chicago office of the A. D. A. writes: "Just a brief report from half-way around the world. I am now stationed in India and we have been here long enough to become fairly well adjusted and acclimated to our location in the center of a large tea estate. Our living and working conditions are both far superior to any of our expectations. There are plenty of problems and snags continually arising in the Mess Department, but that only adds interest and much valuable experience to the job. I am the only dietitian with our unit and have more than enough work to keep me busy. I love my work and, all in all, am glad I am in foreign service. The dietitian in foreign service with the Army can really be a very valuable member of the personnel of a hospital, I fully believe. My very best to you and your staff and here's hoping I will be asking for a civilian job soon!"

First Lt. Mae Hellick, 33 General Hospital, A.P.O. 763, c/o Postmaster, New York City, writes to Mable MacLachlan as follows: "I do hope I am not too late to continue my membership in the Association. I should be very much upset if I did not receive my JOURNAL, as this is our only means of keeping up in the dietetic field news. We over here in Africa are having some interesting experiences. We are fortunate to be in an area with other hospitals and have a monthly luncheon meeting of dietitians, mess officers, and the Quartermaster heads. This meeting has been the means of solving many of our rationing problems and gives us a chance to exchange ideas. Our hospital is a complete tent hospital with a few permanent buildings. We opened with a 200-bed capacity but very soon increased to 1500 beds. Approximately 10% of our patients are on special diets, about 8 different types of diets having been prescribed. With the limited amount of equipment and food supplies we make out quite well. We were fortunate to have turkey for Thanksgiving and were proud to be able to serve a grand meal. The boys were thrilled to work with fresh food materials once again and all put forth their best efforts. We are now looking forward to Christmas. I do hope that my name will be on the December JOURNAL list, as I certainly will miss receiving an issue."

Army Camps for Veterans Bureau Hospitals. The War Department has announced that certain Army camps vacated by troops sent overseas will be used by the Veterans Bureau.

American Dietetic Association to Publish Book. A manual on "The Care of Equipment" will be offered for sale soon for not more than $1.50 a copy. This was compiled during 1942–43 by the Administration Section with J. Marie Melgaard as chairman and will be published by the Burgess Publishing Company, Minneapolis.

1944 Red Cross War Fund. According to a communication received from the American Red Cross, Washington, January 3, during the year 1944 it must supply some 5,000,000 blood donations; each month 2500 nurses must be recruited for the Army and Navy; Red Cross field directors and other trained personnel must be stationed at military and naval posts and hospitals to help servicemen and their families, a task in which the Red Cross chapter on the home front does its share. At home, disasters must be met as they occur; Nurse's Aides and first aiders must be trained and other educational projects continued; food parcels for distribution to prisoners of war must be packed, surgical dressings made and the details of administering the organization must be attended to. Special mention is also made in the communication of the training of Dietitian's Aides in hospitals as one of the organization's major activities for the year. All activities of the Red Cross continue to be financed by voluntary gifts and a strong

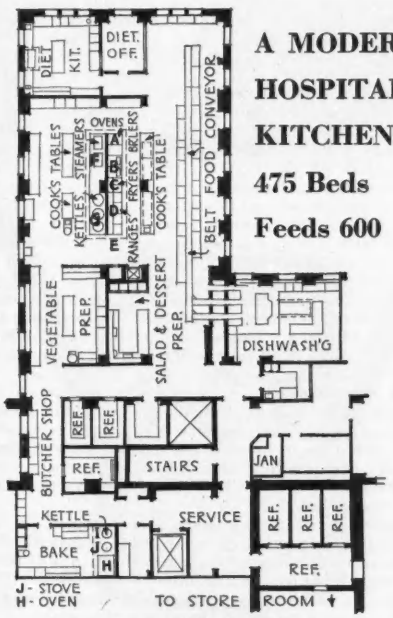
Will Your Post-War Kitchen Layout Be

PLANNED—OR PIECEMEAL?

In planning a new kitchen or modernizing an old one, call in a competent layout engineer, familiar with mass food production problems and with the "specialized cooking tools"* that help to solve them. Remember that piecemeal planning costs more—and seldom gets results. And that Blodgett Roasting and Baking equipment meets every food production requirement.

No. 959 Roaster and Double Baker Oven

*A "Specialized Cooking Tool" One of 28 Models



A MODERN HOSPITAL KITCHEN
475 Beds
Feeds 600

Designed by Charles Schied
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(b) 2 Broilers
(c) 2 Fryers
(d) 3 Skeleton Hot-Top Ranges
(e) 1 Range
(f) 2 Steamers
(g) 3 Stock Kettles
(h) 1 No. 982 BLODGETT GAS-FIRED BAKE OVEN
(i) 1 Stock Kettle
(j) 1 Confectioner's Furnace

THE No. 952 BLODGETT ROASTING OVEN in this installation has a capacity of over 300 lbs. in two 12″ compartments. THE TWO No. 982 BLODGETT OVENS provide four sections of two compartments each, with 16-pan, 96-pie capacity. The right-hand oven does double duty as a roasting unit.

Write today for "Case Histories of Successful Mass Feeding Operations" and "The Role of the Roasting Oven in Mass Feeding".

CIVILIAN OVEN USERS MAY BUY NEW OVENS UNDER ORDER L-182

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appeal is being made for support through contributions to the 1944 Red Cross War Fund.

Revised OPA Regulations Affecting Hospitals. Under a recently established plan, hotels, restaurants, and other commercial eating establishments receive adjustments in their point allotments on the basis of the gross dollar revenue from service of food and refreshments, as well as on the basis of the number of persons to whom they serve food and the number of persons to whom they serve refreshments. However, according to the provisions of amendment 45 to General Ration Order 5, effective January 15, hospitals are not required to furnish their local boards with information on dollar revenue as called for on OPA Form R-1307 Supplement or to keep continuing daily records of their gross dollar revenue from food. A release from OPA concerning the amendment explains, "The factors that determine the need for food adjustments for hotels and restaurants cannot readily be applied to hospitals. The type of food served in hospitals does not vary appreciably nor can the hospital adjust the size of its portions or the number of its patients, since both are determined largely by the kind and amount of illness in the community. Furthermore, hospital revenue frequently comes from a number of different sources, in addition to the charges made to patients, and it would be difficult to break down this total revenue in order to separate the amount obtained from services of food."

Revised Ration Allowances for School Lunches. A new plan for providing rationed foods for schools was announced by OPA January 17. The new allotments, effective as of that date, are based on the number of persons served, rather than on the amount of food used in December 1942, the base month under the former OPA "institutional user" rationing program. Schools under contract with FDA to serve lunches designated as Type A or Type B may receive a maximum of the following per person allowances of rationed foods: Type A, a complete meal providing from one-third to one-half the daily nutritional requirements: sugar, .03 lb., processed food .6 points, meats and fats .93 points. Type B, a simpler lunch requiring less rationed food: sugar .03 lb., processed food .4 points, meats and fats .5 points. Although these specific point allowances apply only to FDA contract schools, other schools may also apply for adjustment in their base if they change their operations to serve more complete meals than in the past. The number of points allowed will depend on the type of meal served, using meals served in other schools as a basis of comparison.

Adjustments in point allowances for all schools will be handled by local War Price and Rationing Boards. Applications are made on Form OPA R-315. Beginning March 1, a school's allotment of food points will be computed separately for the number of persons served food, and the number of persons served "refreshments." (A student, for example, who brings most of his lunch from home, and buys milk at school, or a dish of ice cream, or both, will in the future be included in the school's count of persons served refreshments only. On the other hand, a student who buys soup or a sandwich or his entire meal will be included in the school's count of persons served food.) The new base for granting points will be figured by the local ration board with which the school is registered. Allotments for March-April will be made between March 1 and March 15. In order to make it possible for schools to operate during the first 15 days of each period when allotments are being computed by the boards, each school will be allowed a "reserve" of food points equal to 25% of its January-February allotment.

In a communication to this JOURNAL, Kris P. Bemis, Chief, Institutional User Branch, Food Rationing Division, OPA, stated, "The new allotments were worked out in close cooperation with school lunch and nutrition experts of the FDA, and are based on statistics showing the amount of rationed food needed to meet school lunch requirements. The terms Type A and Type B are used purely for administrative purposes and all schools (whether FDA or not) are entitled to classify their lunches as such, if they meet the requirements of the respective groups."

Food Rationing for Institutional Users. Amendment 46 to General Ration Order 5, effective March 1, concerning revised regulations for institutional users of rationed foods, was issued by OPA February 15. In announcing the new regulations, Chester Bowles, OPA Administrator, stated, "The net effect of the revised restaurant program will be to equalize the amounts of processed foods, meats, and fats and sugar that the many different types of institutions need. Allotments of rationed foods will be based on the number of meals served. Refreshments will not be counted as 'meals.' Allotments needed to take care of this type of service will be based on the number of refreshments served. The two items—meals and refreshment services—will be kept entirely separate. . . .Under OPA's new program, beverages of all kinds, served only as beverages and without food for which charge is made, can no longer be reported as a meal served. The same beverages or any one of them may, however, be served with any food for which a charge is made and the same will constitute a meal for the purposes of figuring ration allowances. . . .Due allowance has been made for supplying the sugar necessary for the mid-morning cup of coffee, the late afternoon cup of tea, or a cocktail for the before-meal 'restorative.' Briefly, this means the number of tall, cold glasses or short, hot cups of beverage will no longer enable one proprietor to provide more butter, meat, or rationed processed foods than his competitor whose business is entirely that of feeding his customers."

Factors for determining the per person allotment of food for the March–April restaurant ration period are as follows: For the restaurant classified as a non-baker: sugar .03 lb., processed foods .7 points, and meats and fats 1.0 points per person per meal. For the restaurant classified as a baker: sugar .04 lb., processed foods .8 points, and meats and fats 1.1 points per person per meal. Beginning March 1, no supplementary allotments will be allowed for increased services of refreshments. Supplementary allotments for food services will be limited to increases of more than 20% in customer patronage rather than the previous 10%.

Industrial Feeding. Speaking before a joint meeting of the Labor Advisory and Inter-Agency committees in Washington February 5, Lee Marshall, Director of Food Distribution, WFA, said that cooperation of government, labor, and management had already been established and that "it should be possible to move rapidly ahead in achieving the goal of the industrial feeding program," *i.e.*, feeding at least 60% of the nation's 20 million industrial workers on the job.

WFA's Office of Distribution (*see* news items on pp. 190 and 192 this JOURNAL) is surveying plants at the request of management and is making recommendations for the most practical types of food service, according to a release of USDA dated February 8. Plants employing more than 2 million workers had been surveyed in the month of January. OD also is assisting in getting food to shortage areas and in making adjustments in food plans in accordance with the availability of rationed and nonrationed foods. Recommendations, plans, equipment lists, and menu suggestions have been developed for different types of installations such as cafeterias, canteens, lunch stands and packed-lunch services necessary to meet the needs of plants of different sizes and types of industries. These recommended standards will be made available for use throughout the country.

Civil Service Positions for Dietitians. Received too late for previous inclusion in the JOURNAL, an announcement from the Los Angeles County Civil Service Commission states that senior dietitians are wanted for positions in the Los Angeles County Department of Charities. Dietitians under 55 years of age with at least 6 months' recent technical experience in a hospital are urged to apply. Candidates must have graduated from an accredited college with a major in home economics, dietetics, or foods and nutrition and must have completed an approved hospital, administrative, or clinical course in dietetics. One year's additional experience may be substituted for the graduate course in dietetics. The announcement stated that applications must be filed on or before March 6. Full information may be obtained by writing to Mr. George C. Brown, Office of the Commission, 102 Hall of Records, Los Angeles 12.

National Food Situation. U. S. civilians may expect more cocoa, chocolate and coffee during 1944, WFA reported in January. Per capita consumption of roasted coffee is expected to be about 13.7 lb., or about 488 cups of brewed coffee, and each civilian is expected to receive the products from about 4 lb. cocoa beans, representing an increase of about 4 lb. coffee and ½ lb. cocoa beans over the amount received in 1943.

Wartime limitations on shipping space permitting, U. S. civilians will receive 76 million pounds of tea in 1944—about 16 million pounds more than in 1943. United Nations allocations of tea are made on a world-wide basis by the Combined Food Board. These nations are allocated a percentage of the total available supply of tea, based on their normal usage, to the extent that shipping and facilities in producing countries are available. Final allocations in the United States, of course, can total no more than the estimated supply, this final division being made according to the relative urgency of the various claims, contribution to the war effort, and the degree of U. S. responsibility toward the various claimant groups (including U. S. military and war services, friendly nations, and U. S. territories). Today, only India and Ceylon are supplying the U. S. with tea, which is consumed in varying degrees throughout the nation with the large tea-consuming areas located in New England (around Boston) and in the Middlewest (around Chicago). During the summer fairly large quantities of iced tea are consumed throughout the country, especially in the South. It is estimated that about 118 cups of tea per capita will be available for U. S. civilians in 1944 if anticipated shipments materialize, normal consumption being about 140 cups a year. The annual per capita consumption of tea in the British Isles is normally about 12 lb. (2400 cups).

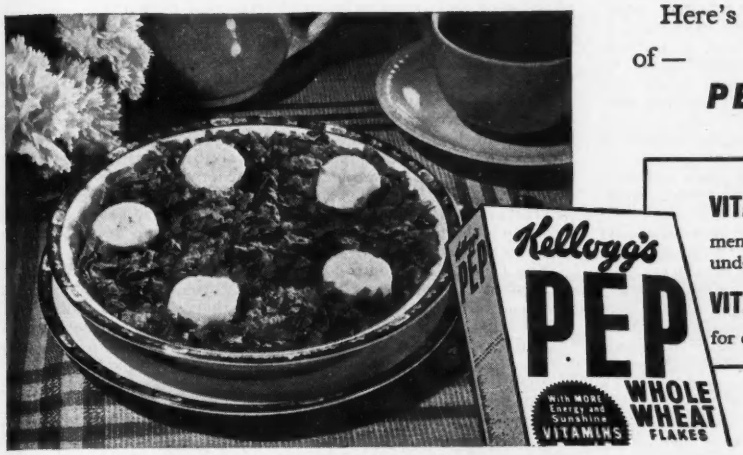
WFA announced January 1 that about two-thirds (67%) of the

DELICIOUS—MORE VITAMINS, TOO

DIETITIANS are particularly enthusiastic about KELLOGG'S PEP, and wisely, too! For this grand cereal says "Good Morning" with whole grain nutritive values in the form of deliciously flavored whole-wheat flakes. Plus MORE vitamin B_1 and vitamin D than any other nationally advertised wheat-flake cereal!

Here's what a one-ounce serving of—

PEP PROVIDES



VITAMIN B_1 (Thiamin) .252 milligrams. This is ¼ the minimum daily requirement for adults, and more than ¼ for children under 12.

VITAMIN D (Calciferol) 400 U.S.P. units. The full minimum daily requirement for children or adults.

PEP is made by Kellogg's in Battle Creek, Michigan

V-C-B Now in Demand More than Ever!

Just add water to produce a pleasant fruity beverage approximating the Vitamin C potency and caloric value of fresh orange juice, at a standard cost of 54¢ a gallon!

Because of its palatability, economy and labor-saving convenience, many institutions had adopted V-C-B as a standard for administering Vitamin C, even before the present shortage and high cost of fresh citrus fruits.

Only one 4-oz. liquid portion of V-C-B beverage supplies individual daily requirements—1000 International Units —of Vitamin C and 50 calories. V-C-B is also valuable for fortifying fruit juices and beverages with Vitamin C.

Hermetically sealed in oxygen-free containers, V-C-B keeps indefinitely; there is no spoilage or waste. If you have not tried V-C-B, send for a trial order now!

V-C-B and all advertising claims for it are accepted by the Council on Foods of the American Medical Association.

SEND FOR YOUR TRIAL ORDER NOW!

Single 1 lb. 12 oz. cans...each	$ 1.40
1 Doz. 1 lb. 12 oz. cans...doz.	13.50
3 Doz. 1 lb. 12 oz. cans...doz.	13.25
6 Doz. 1 lb. 12 oz. cans...doz.	13.00

HILKER & BLETSCH COMPANY, VITAMIN PRODUCTS DIVISION
614 West Hubbard Street, Chicago 10, Illinois

total supplies of meat available for all needs in 1944 has been allocated to U. S. civilians. This allocation will allow about the same per capita civilian meat consumption as in 1943, namely, approximately 132 lb. per capita on a dressed weight basis, compared with the prewar 1935–39 average of about 126 lb. U. S. military and war services are to get about 17% of the total allocable supply. Of this total, about 56% will be beef, 4% veal, 4% lamb and mutton, and 36% pork. Our allies, other friendly nations, Red Cross and U. S. territories are to get about 12% of allocable supplies, divided as follows: Great Britain, including overseas forces 6%, Russia 4%, other allies and liberated areas about 1%, U. S. territories about one-half of 1%. Most of the meat for our allies will be pork. Because both supplies and needs shift rapidly in wartime, about 4 lb. of each 100 lb. is allocated for contingency reserves which may also serve as a margin to allow for adjustment between estimated and actual production. On January 28, WFA directed packers operating under federal inspection to set aside at least 80% of all canner and cutter beef for the U. S. armed forces.

U. S. civilians will receive nearly 229 million pounds of compressed yeast for baking purposes in 1944—or more than 9 out of every 10 lb. allocated. Dry active yeast, also used in baking, is especially valuable for shipment overseas, and a large proportion of the available supply will be shipped to military services and to our allies. Nutritional yeast, including both primary grown and brewers' yeast, valuable for human food because of its high protein, carbohydrate, mineral, and vitamin content, also will be available in 1944 for allocation, and U. S. civilians will receive 8 of the 11¼ million pounds allocated.

WFA has released 4000 cases, about 120,000 lb., dry pea and soya soup powder to civilian consumers, from reserves which had been held for war requirements.

The kraut industry has been asked by WFA to process 80,000 tons southern cabbage into kraut. A record winter production of cabbage is expected, and a strong demand for kraut for the civilian market exists, according to the kraut industry food advisory committee.

Dried apricots will be available to civilian hospitals in limited amounts, according to a USDA release dated January 26. Hospitals seeking allotments, which will be based on the number of patients served daily in 1942, are asked to apply to regional FDA offices.

The effective date of the enrichment of bakery products other than white bread has been postponed until May 1, 1944, WFA stated in Amendment 6 to FDA 1. Manufacturers of niacin have had difficulty in obtaining sufficient supplies of raw material to make enough niacin to cover all requirements.

Prospects for the total catch of fish for canning in 1944 were viewed with optimism by members of the canned fish industry advisory committee, WFA, at a meeting in Washington January 6, the reason being that more fishing boats are now being built and a number are being returned from military service.

FDA officials have announced that plans are being formulated now by the government and the food trade to distribute during the demobilization period any government-held food supplies which may not be needed by the government.

WFA has asked the public to accept produce on its merits, irrespective of whether it is delivered in new or second-hand packaging materials. Used containers, WFA officials explain, should be regarded as necessary "wartime packages," comparable to recapped rubber tires. "The shortage of new containers is such that many fruits, vegetables, and other food items in 1944 will either be delivered in used containers or not at all," the release states.

A report by Secretary of Labor Perkins, based on a Bureau of Labor Statistics survey, and released January 2, revealed that prices of staples that families buy in retail markets for everyday living were up by about 3½% at the end of 1943 as compared with those at the end of 1942. According to the report, "Taking the period of the war as a whole, prices are up much less than in the first World War. From July 1914 to November 1918, cost of living rose 62%, while from August 1939 to December 1943 it rose approximately 26%." It was estimated, according to the latest data available (November 1943) that food prices increased 4.7% from November 1942 to November 1943, clothing 5.6%, fuel and electricity and ice 1.7%, house furnishings 2.3%, and miscellaneous goods and services 4.4%. It is stated that "It is not the level of prices that makes this wartime rise so important, but the rapidity of the price rise since early 1941, and the consequent necessity for very rapid readjustment of family budgets and of manufacturers' and retailers' trading operations. . . . Most people have the impression of a much greater rise than actually occurred in the general level of prices, taking markets as a whole. The greatest price rises of the year were in retail prices of foods and in the cost of civilian clothing and services, which are bought frequently by everyone. Housewives who complained about the high cost of living in 1943 were chiefly disturbed by higher prices for eggs, fruits and vegetables, fish, and other perishable foodstuffs, which went well above 1942 levels. These advances gave most people a conviction of rapidly rising living costs, even though prices of some staples, such as bread, rose very little, and prices of meat and butter actually went down after midsummer because of the subsidy program. During the course of the year clothing costs also went up by almost 6%. Other elements in the family budget, more easily forgotten, were stable. Sharpest food price increases at retail during the year were for eggs, fresh fruits and vegetables, fresh fish, and poultry. Prices of bread, shortening and sugar were little changed. Butter prices were down almost 5 cents per pound during the year and prices of beef, veal, pork, and lamb were down on the average 7% under OPA 'cut backs' and the subsidy programs."

Allocations of the supply of 139 trillion U.S.P. units vitamin A for 1944 have been announced by WFA as follows, based on planned division of expected supplies of food: U. S. civilians 63%, U. S. servicemen 4%, exports and shipments to territories, allies, other friendly nations, and a contingency reserve for emergency war purposes 33%. Of the civilian supply, about 45% will be used for pharmaceutical preparations, 8% for food enrichment, and the remainder for feed enrichment.

WFA has issued an order (FDA-92) restricting the total production in 1944 of all types of cheese other than Cheddar, cottage, pot, and bakers' to the quantity produced in 1942. WFA officials stated that it would be difficult to predict the precise effect the order will have on total civilian supplies of cheese. Under the new production quotas the supply of cheese types affected by the order, virtually all of which goes to civilians, will be about 8% lower than in 1943. Some of the expected increase in Cheddar output may be available to civilians. The order restricts the production of all products made from curd regardless of the manner in which it may be treated or modified, thus restricting the manufacture of many new modified cheeses and cheese foods.

The *Dairy Situation* for December, prepared by the Bureau of Agricultural Economics, USDA, states that milk production in 1943 was about 118 billion pounds. To reach the 121 billion-pound goal for 1944 there will be required increased cow numbers, diversion of feed from other livestock to dairy cows, and a maximum production of pasture and feed crops for the latter part of the year. If present trends continue, total milk production will be about 116 billion pounds in 1944.

According to the *Poultry and Egg Situation*, in the first half of 1944 supplies of poultry for civilians may be a little larger than a year earlier; but, in all likelihood, they will be considerably short of prevailing demand at ceiling prices. The 1944 goal for broilers is 16% below the preliminary indication of the 1943 output. Civilian supplies of eggs in the first half of 1944 are likely to average at least as large as in the corresponding period of 1943.

With industrial production nearing its limit, great efforts will be required to meet military production goals in early 1944, as stated in the *Demand and Price Situation*, and civilians can expect little easing in the over-all supply situation for manufactured goods in the next few months, although some goods will become more available. The UNRRA has not yet started operations (December 1943) but the demand for food produced in the United States will probably be increased by large European relief needs later in 1944. These needs will be in addition to lend-lease.

The *Vegetable Situation* states that the civilian per capita supply of canned vegetables for the 1943–44 season is expected to be about three-fourths to four-fifths that of the 1942–43 season, but slightly larger than the 1935–39 average per capita consumption. Plentiful supplies of late-crop potatoes for consumers are indicated for the winter season. Recent prices for sweet potatoes have been at high levels, nearly twice those of a year earlier.

Duties of WFA Agencies Redefined. According to a USDA release dated January 22, certain changes in designations of organizations within WFA and assignments of responsibilities in several fields of operation have been made "to speed up operations." According to the Administrator's Memorandum No. 27, Supplement 4, the Food Production Administration becomes the Office of Production, and the Food Distribution Administration becomes the Office of Distribution. Heads of these agencies will continue to have the titles of Director of Food Production and Director of Food Distribution, respectively. The Office of Distribution will be responsible for all procurement, stockpiling, storage, and distribution of food by WFA, including distribution of food acquired by the several loan programs of the Administration, except for that procured by the Commodity Credit Corporation from Canada, from the Caribbean area (sugar only), and other food acquired by the CCC as may be requested by the Office of Distribution. Programs now administered by the CCC will be administered by the Office of Distribution after May 1, 1944. The Office of Production will be responsible for distribution of all food allocated for use as feed and other production facilities. The Office of Distribution will be responsible for preparation of directives for foreign procurement of food. An Office of Price has been estab-

MAKE THE MOST EFFICIENT USE OF YOUR LIMITED MEAT SUPPLY BY USING

REDUCES SHRINKAGE! **EXTENDO** *EXTENDS MEAT 100%!*

This economical meat extender reduces shrinkage by holding the juices and the fat of the meat within the loaf. Furthermore, the use of EXTENDO produces a savory, tender product. Remember, you need fat to give the richness of flavor so characteristic of good meat whether it is roast beef or a meat loaf. *Just look at these pictures — and see the difference EXTENDO makes!*

USUAL MEAT LOAF

Ingredients:

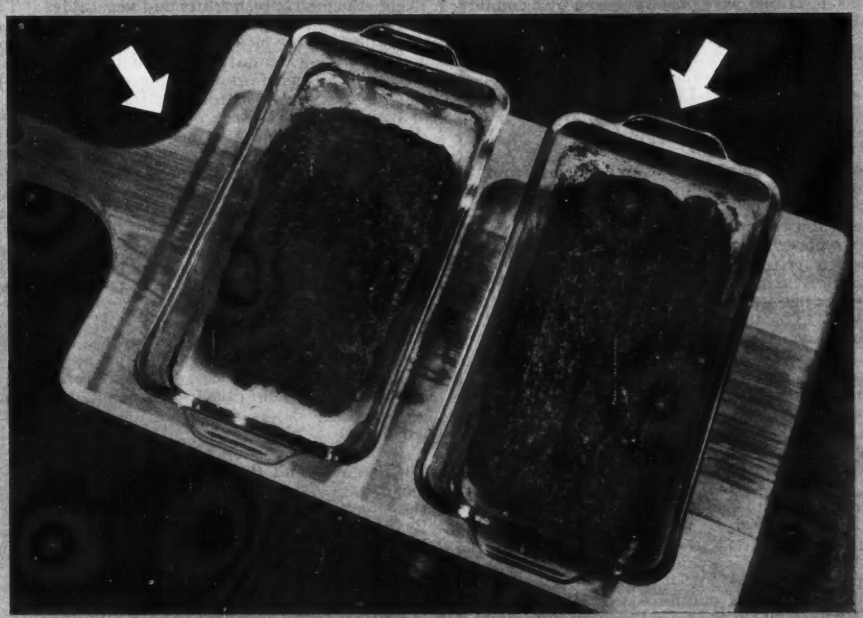
1¼ lbs. ground beef
1 oz. (1 c.) bread crumbs
2½ oz. (⅓ c.) liquid
½ oz. (2 tb.) chopped onion
⅛ tsp. poultry seasoning
1 egg (1½ oz.)

EXTENDO MEAT LOAF

Ingredients:

¾ lb. ground beef
¼ lb. EXTENDO
½ lb. liquid
½ oz. (2 tb.) chopped onion
⅛ tsp. poultry seasoning
1 egg (1½ oz.)

Bake 350° F.—1 Hour



Total Raw Weight	25½ oz.
Total Cooked Weight	18 oz.
Total Shrinkage	7½ oz.

Total Raw Weight	26 oz.
Total Cooked Weight	23 oz.
Total Shrinkage	3 oz.

EXTENDO is a nutritious meat extender that provides approximately the same essential amino acids, minerals and vitamins at a level found in meat.

EXTENDO is available in 25-lb. bags at 22½¢ per lb., f. o. b. New York.

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501 Madison Avenue, New York 22, N. Y.
Kindly send me _____ 25-lb. bags of **EXTENDO**

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CITY _____ ZONE _____ STATE _____

lished within WFA, which will have supervision over all functions relating to approval of maximum prices to be fixed for agricultural commodities or products, and relating to price support programs in connection with particular commodities.

As announced January 14, Lee Marshall, chairman of the board of directors, Continental Baking Company, and formerly Director of Materials and Facilities, WFA, was appointed Director of Food Distribution, succeeding Roy F. Hendrickson, now Deputy Director, United Nations Relief and Rehabilitation Administration. It is assumed that Mr. Marshall will act as director of the newly designated Office of Distribution. Ashley Sellers, assistant administrator, WFA, will serve temporarily as the Director of Price.

According to the February *Nutrition News Letter*, the Nutrition and Food Conservation Branch, FDA, was reorganized as the Nutrition Programs Branch, effective December 1, 1943. Field consultants were to be assigned to work directly with state nutrition committees rather than through regional offices, and personnel designated as executive secretaries were to assist state committees in meeting needs of local committees.

Organization and Personnel of Civilian Food Requirements Branch. Scattered divisions of FDA dealing with the civilian food supply have been merged under the Civilian Food Requirements Branch, headed by Dr. Norman Gold, according to Gladys Solomon, Marketing Reports Division, FDA. The organization at present is as follows: (1) Food Needs Division, Charlotte Chatfield, acting chief; (2) Commodity Requirements Division, Dr. William Ockey, chief; (3) Civilian Food Distribution Division, Walter Kiplinger, chief; (4) School Lunch and Food Preservation Division, Marcus Gordon, chief; (5) Nutrition in Industry Division, Dr. Robert Goodhart, chief.

Nutrition Program Materials. A booklet describing approved films on food and nutrition is available for 25 cents from the New York City Food and Nutrition Program, 45 Lafayette Street, New York. All of the films described have been reviewed by a committee of technically trained and other persons. Information concerning distribution of each film, a résumé of the content, and an appraisal are included.

The pamphlet "Family Food Plans for Good Nutrition," issued by BHNHE to supersede "3 Market Lists for Low-Cost Meals" and "Market Lists for Moderate-Cost and Liberal Meals" is now available. Copies are obtainable free on application to the Office of Information, USDA, Washington 25.

"Soybeans and Soybean Products," also available free from the Office of Information, presents up-to-date information on this subject.

A series of 6 phonograph records on different phases of the enriched bread and flour program is now available free from state or regional FDA offices to county and state nutrition committees, according to the January *Nutrition News Letter* prepared by FDA. Six nutrition authorities are interviewed for 4½ minutes each by an inquiring housewife. The interviews are on 78 RPM, 12-in. records which can be played either on home phonographs or at local radio stations.

The same issue describes a project undertaken by the Bay Area Nutrition in Industry Committee in California as a means of bringing nutrition and wartime food information to industrial housewives, namely, staffing markets located in the centers of government housing projects with nutrition aides or dietitians equipped with educational posters, government leaflets, and mimeographed recipes.

An article entitled "Adequate Diets for Mothers and Children Under Rationing," by Drs. Sarah S. Deitrick and Ruth Cowan Clouse, appeared in the October issue of *The Child*. A limited supply of reprints of this article is available from the Children's Bureau, U. S. Department of Labor, Washington.

The January *Consumers' Guide* contains several useful items concerning food, including a chart showing "how we will eat this year"; a series of cartoons concerning conservation of food; an illustrated article on how the Food and Drug Administration, FDA, and OPA operate to maintain standards, establish quality grades, and control prices; and a description of recent efforts by labor groups to provide good food for industrial workers.

School Lunch Recipes is the title of Miscellaneous Publication 537, price 10 cents, on application to the Superintendent of Documents, U. S. Government Printing Office, Washington. The recipes are geared to fit the Type A and Type B lunches as set up by FDA (*See* p. 96, this JOURNAL for February). It is suggested by FDA that the two other publications, "Handbook for Workers in School Lunch Programs," and "Menu-Planning Guide for School Lunches," previously mentioned in this JOURNAL, be used with the recipe booklet. "School Lunch Recipes" supersedes Miscellaneous Publication 408, "School Lunches Using Farm Surpluses." Some of the recipes will be found generally applicable in large group food services other than in schools.

Conserve Critical Resources. A booklet of information has been prepared by OWI and sponsored by WPB, concerning the nation-wide government program to fight waste and effect savings in seven industries: coal, oil, gas, electricity, water, communications, and transportation. According to the brochure, the need for general conservation of these resources has become so urgent that the Government is calling for immediate, voluntary conservation measures by the public and by industry. "Although the savings in a single household, commercial establishment or industrial plant may seem small, the possible aggregate savings nationally are tremendous. No matter how insignificant each individual conservation action may appear, there will be direct savings in manpower, fuel, material and equipment, all of which are vitally needed in war production. . . . Voluntary participation by the public in war programs has proved effective in the past, especially during short periods of crisis. With war production approaching its peak, conservation of these resources no longer remains our occasional problem—it has become an urgent need demanding voluntary dynamic action by the public." The program book gives specific rules to be followed in the home and in commercial establishments and institutions for conserving the items covered, as well as "copy themes" and "copy slants" for the convenience of those presenting information to the public. A limited number of copies of the book is available from Thomas Devine, assistant director, Office of Civilian Defense, Washington.

"No-Point—Low-Point Foods" Program. Retail and wholesale food distributors, including independents, super-markets, and food chains, as well as the restaurant and hotel industry; trade associations; and WFA will cooperate in a nation-wide drive under the banner of "No-Point—Low-Point Foods," which is expected to create larger sales of unrationed and low point value foods during the early spring. Foods tentatively chosen for special emphasis, according to a WFA announcement, include most of the grain and soybean products, spreads for bread, some processed and frozen vegetables, eggs, potatoes, oranges and grapefruit, and other seasonally fresh fruits and vegetables. The grocer's promotion of these foods will be backed by national spot radio in March, a 24-sheet poster, newspaper advertising, and special activities by local nutrition committees, who will urge use of the more abundant foods as a means of preventing food waste, conserving scarce foods, and assuring the nutritional welfare of families. Home Economics Women in Business are being asked to support the program by distributing recipes and menus incorporating these no-point and low-point foods. Meetings were scheduled under the leadership of Marie Sellers, General Foods Corporation, both in Chicago and New York. Also, representatives of the leading national magazines are offering their cooperation and support.

According to Katherine M. Johnson, Executive Secretary, A.D.A., who attended the Chicago meeting, a feature of this government-sponsored sales program of nonrationed food, financed in part by private industry, will be to supply every retail grocer in the United States with a series of placards to hang in his store and a tag for each grocer to wear. HEWIBS attending the meeting were asked to emphasize the use of cereals in their writing, radio talks, etc.

The January *Group Services Bulletin*, issued by the Consumer Division, OPA, contained information about price panels and suggestions for leaders of women's groups interested in local price control work.

Labor's Cooperation in Industrial Feeding. An "Exhibit on Food in War and Peace," sponsored by the Union Label Trades Department of the American Federation of Labor, organized by the Office of Labor Education, Nutrition and Food Conservation Branch of FDA, and presented by the Boston Central Labor Union and the Massachusetts State Nutrition Committee, October 9, 1943, at the "Labor's Conference on Food and Nutrition," was described in the program as follows:

"It is the main objective of this exhibit to give the public a comprehensive view of the role of food in health of individuals, in the strength of nations, in the effort for victory, and in building a future peace that will truly guarantee freedom from want."

The exhibit was divided into three parts, entitled "Food for Health"; "Food for Victory"; and "Food to Build a Peace." Each part had several sections, a list of which was printed in the program. Assistance in setting up the exhibits and furnishing materials was given by the Nutrition Committee of Boston, the Section of Visual Reports, FDA, and many national and international organizations as well as local and national commercial concerns.

The principal speaker at the Conference was Dr. Mark Graubard, Director of Labor Education, Nutrition and Food Conservation Branch, USDA, whose book, "Man's Food—Its Rhyme or Reason," was reviewed in this JOURNAL for January.

In accordance with its recently assumed responsibility for the direction of the in-plant feeding program, FDA has organized an Inter-Agency Committee on Food for Workers to coordinate the activities of WFA, WPB, OPA, WMC, War Department, Navy, Maritime Commission, FWA, and the U. S. Public Health Service.

SAVES Flavor OF FOODS

No burnt offerings...no off-taste flavors when food is processed in GROEN Steam Jacketed Kettles. Risk of scorching is eliminated...there are no "hot-spots" because kettle walls are uniformly thick throughout. And there can be no trace of previous contents to cause disflavor for there are no cracks, pockets or ledges to hold particles. Course of outflow is streamlined...discharge is complete...and cleaning is simple and thorough. Such features have made GROEN Steam Jacketed Kettles favored with prominent dietitians. If you need a kettle now, consult our Priority Division. Write us today.

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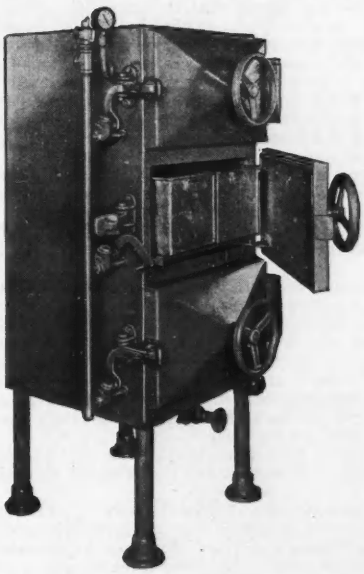

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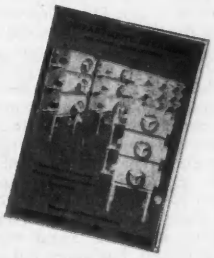

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Similar committees are being formed on the regional level. The Inter-Agency Committee has agreed that in general the requirements of industrial workers can be met through the medium of institutional feeding, according to the January release to directors of food services in industrial plants. This release also states that the foods available to industrial workers will be augmented by increased amounts of luncheon meats, dried peas, peanuts and peanut butter, cereals, soybean flour and grits, bread, potatoes, fresh green and yellow vegetables and citrus fruits, citrus fruit juices and citrus marmalades.

Organized labor groups met with government officials in Washington January 10 to discuss plans for expansion of in-plant feeding facilities for the nation's industrial workers in 1944. The A. F. of L., C. I. O., Railroad Brotherhoods, and United Mine Workers will work with FDA and the Inter-Agency Committee on Food for Workers.

The union delegates conferred with WFA on a plan to double in-plant feeding facilities during 1944. At present, 6,500,000 war workers can be fed hot lunches in war plants. This represents 33% of the total. The goal is an increase of factory cafeteria facilities to make mid-shift lunches available to 60% of war workers in 1944. It was reported that surveys had indicated that cold lunches brought from home do not supply sufficient energy for maximum production. Many workers also stated that their wives are in war work and cannot put up lunches.

OPA reported that a plan for direct allotment of food supplies to plants seeking to expand in-plant feeding facilities was virtually completed.

Food and Drug Administration, Biennial Report. Activities such as clearing the channels of commerce of filthy food, inspecting food-processing establishments to see that they meet reasonable sanitary requirements, and conducting scientific tests and investigations for war agencies were featured in this report. Over 4000 seizures were made during the period covered by the report, among these, filthy or decomposed flour, filthy corn meal, candy, honey, sugar, butter, cheese, dried eggs, fish, dried fruit, tomato products, poultry, and other items. While considerable in the aggregate, the amount of food seized, it is said, is small compared with the great volume of clean, sound, and wholesome food products available. Other subjects covered in the report include food poisoning investigations, pharmacological assays and insulin control, investigations concerning drugs and cosmetics, vitamin products, therapeutic devices, and new drugs, and certification of coal-tar colors.

Emergency Maternity and Infant Care Program. A statement of the administrative policy of this program, in the Organization Section of the *Journal* of the American Medical Association for January 22, includes the following: "Food adequate for the needs of the parturient woman shall be prepared and served under sanitary conditions. . . . If the food service is not under the direction of a qualified dietitian, consultation should be obtained from a dietitian or nutritionist available to the community."

According to this statement of policy, the first requirement is considered the absolute minimum for approval under any conditions; the second requirement is to be established as minimum when conditions permit, either at the time of approval or later.

Eggs, Poultry Meat, and Turkeys. A review of the research and literature concerning the nutritive value of eggs and poultry meat, by Dr. H. R. Bird, University of Maryland, has been published by the Poultry and Egg National Board, Chicago, as *Nutrition Research Bulletin No. 5* and is available at 5 cents per copy. This review is apparently complete and up-to-date and includes tables and references. Under the heading "Information Needed" Dr. Bird states, "It is evident that more work is needed on the amount of vitamins A and D in chicken fat in view of the fact that much of the body fat of chickens is usually consumed with the muscle meat. Information is needed, too, on the vitamin content of the flesh of broilers as compared with fowl and of turkeys as compared with chickens. Veal is significantly higher in thiamin and pantothenic acid than is beef and similar differences might exist between broilers and fowl. In vitamin A content mature birds might show an advantage over growing birds since vitamin A storage is known to be cumulative. Information is needed on the effects of various methods of cooking on vitamin content. Some information of this kind is available for other meats but methods of cooking poultry meat are to a certain extent distinctive."

Kathryn B. Niles, home economist for the Poultry and Egg National Board, has compiled a folder detailing the proper methods of buying, preparing, roasting, and serving turkeys. The comparative virtues of tom turkeys and hen turkeys, of few or many pinfeathers, of removing or not removing the neck of the bird, "legs to the right or left," and various other fine points are gathered together in a competent Emily Post-like dissertation on the country's most popular bird. Reprints of "Chicken Cut-Up," also by Miss Niles, which appeared in *Better Homes and Gardens* for September, are available. The proper method of dismembering a chicken, for the back yard poultry-grower, is described and illustrated, including winging, division into sections, freeing the organs, and cutting through joints, also the final steps before placing in refrigerator or oven.

Food Production in South America. A release from the Office of the Coordinator of Inter-American Affairs states that a notable economic effect of the war in Colombia has been an increase in food production for local consumption and for export to neighboring republics. Normally, Colombian agriculture has concentrated largely on coffee—foodstuffs, especially such staples as rice, potatoes, and sugar, being partly imported.

Government figures show that at the outbreak of the war Colombia was importing annually nearly 50 million pounds rice, 2 million pounds potatoes, and 35 million pounds sugar. By 1942, it had reduced rice imports to 50,000 lb. while exporting upwards of 1,500,000 lb. In the first 4 months of 1943, 100,000 lb. potatoes were shipped to Panama and none imported. Sugar shipments showed the same trend. In 1942, sugar imports were reduced by two-thirds to approximately 10 million pounds, while exports of sugar rose sharply to some 5 million pounds.

According to a report by President Prado of Peru, quoted in the same release, a fish farm established three years ago is helping Peru to meet wartime food needs. Already it has delivered to the markets of Iquitos more than 22,000 lb. dried *paicha*, equal if not superior to the best imported codfish, and the largest fish found in the Amazon waters and probably the largest fresh water fish in the world. Specimens up to 15 ft. in length have been recorded. The protein content of dried *paicha*, is reported to be 36% compared with 26% for imported codfish. The fish has few bones, and a low oil content, which facilitates dehydration.

Herded overland to slaughter-houses along the coast, Venezuelan cows, sheep, and hogs are finding their way in large quantities to the mess kitchens of armies on the world's fronts. Large quantities of cocoa are grown for export in Venezuela, together with bananas, tobacco, yams, fruit, manioc, and many other tropical products.

Peru now has a full-fledged victory garden campaign to increase the nation's supply of vegetables for home consumption, sponsored by the *Servicio Cooperativo Interamericano de Produccion de Alimentos* (Cooperative Inter-American Service for the Production of Foodstuffs) established with the cooperation of the United States Government. Free seeds, technical advice on soils and types of produce to be raised, and other information of interest are supplied to gardeners.

Wartime Conference, Food Service Directors. This was held immediately following the annual meeting of the American Dietetic Association, Pittsburgh, and was attended by directors of school cafeterias from Connecticut, Illinois, Massachusetts, Michigan, New York, Ohio, and Pennsylvania. Martha Quigley, director of school lunchrooms, Department of Education, Pittsburgh, and her assistant, Mrs. Fanny Beckwith, acted as hostesses. Dr. L. H. Smith, director of the Pittsburgh School Health Service Department, spoke on the relation of nutrition to the health program as it had been developed in Pittsburgh. A series of 13 posters, designed for children in the third grade and intended to interest them in better eating habits, used by dental hygienists of the department, was exhibited. Samples of these posters may be secured by writing to Dr. Smith, according to Mrs. Quindara Oliver Dodge, who reported the meeting.

Margaret M. Morris, nutritionist, Community Programs Service, FDA, answered questions regarding the effect of rationing on availability of foods in small school cafeterias and in large school cafeteria systems throughout the country. She also explained in detail the FDA plan for school cafeteria feeding. (*See* p. 96 this JOURNAL for February.)

Mr. Ethan A. Scholnick, Bernard Gloekler Corporation, Pittsburgh, explained WPB ratings and priorities on different types of equipment. (*See* p. 850 this JOURNAL for December.)

Winning S. Pendergast, general supervisor, school lunchrooms, Detroit, was appointed chairman of a committee to study legislation pertaining to school lunches, with authority to send needed representation to Washington.

An informal discussion of the various management problems now prevailing in large school cafeteria systems due to wartime restrictions included such topics as length of lunch period, pricing of à la carte selections and nutrition specials, feeding of defense workers in school cafeteria facilities, training of volunteer workers, salaries of student and regular employees, salary levels of dietitians and managers or directors of school cafeterias, policies with regard to vacation and sick pay of employees, child care and nursery school centers for employees of war industries as operated by school cafeteria departments, and methods of ascertaining customer count as a basis for applying for point allotments to OPA.

According to Mrs. Dodge, those who attended the conference were enthusiastic about the value of this type of meeting, especially during the present emergency.

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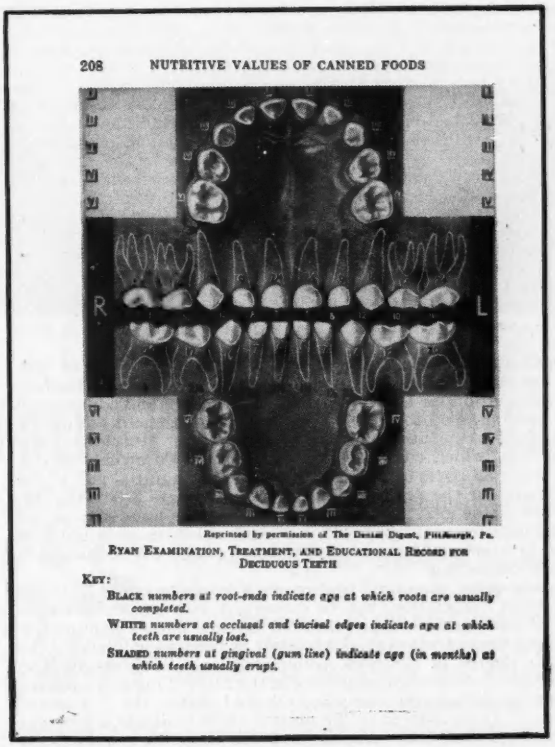

208 NUTRITIVE VALUES OF CANNED FOODS

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KEY:

BLACK *numbers at root-ends indicate age at which roots are usually completed.*

WHITE *numbers at occlusal and incisal edges indicate age at which teeth are usually lost.*

SHADED *numbers at gingival (gum line) indicate age (in months) at which teeth usually erupt.*

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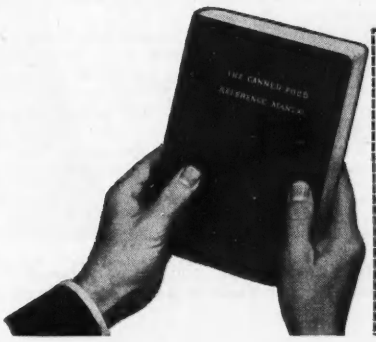

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The 1944 conference will be held in Cleveland, the date to be announced later. Mary Hart White is local chairman and Edna Gilbert, 20 West Wood Street, Youngstown, Ohio, is general chairman.

New York Academy of Medicine, Ninety-Fourth Anniversary Lecture. In a lecture to the laity, sponsored by the New York Academy of Medicine, on January 27, Dr. Charles Glen King, scientific director of the Nutrition Foundation, gave an address on "Food and Civilization."

Borden Awards for Outstanding Achievements in Research. A directory of recipients of this award for 1937–43, which includes photographs and other data and a list of the national associations administering the awards, was published in December. The national associations include American Chemical Society, American Dairy Science Association, American Home Economics Association, American Institute of Nutrition, and Poultry Science Association.

Connecticut Sponsors Cost-of-Living Conference. At this conference in New Haven, February 5, state and local officials and women prominent in the home economics field discussed the various aspects of a prospective plan to hold down the cost of living in the state of Connecticut.

April is Cancer Control Month. Authorized by Congress and by proclamation of the President, April will again be observed as Cancer Control Month in the United States and the Women's Field Army will conduct its annual enlistment and educational campaign. Dr. C. C. Little, managing director of the American Society for the Control of Cancer, writes: "Each year more and more people are learning that time is the key word in cancer control. Each year thousands more people are reporting to their doctor with very early signs and symptoms that may mean cancer. As a result they are being treated in time to prevent cancer or to cure it if it has started." The above-mentioned society at 350 Madison Avenue, New York, will provide without charge information concerning cancer control. It asks for enlistments in the fight against cancer and reminds us that in this disease "action in time means life."

Foods and Restaurant Management. The University of Chicago has entered into an arrangement with the National Restaurant Association for the development of research and educational work bearing upon foods and restaurant management, according to an announcement by President Robert M. Hutchins. The association, which comprises approximately 5000 owners of restaurants in all parts of the nation, is making an initial gift to the University for the project that may approximate $100,000. Acceptance of the gift, it was pointed out, is "one more step in the University's broad program of long standing for research and education in basic problems related to food, ranging from nutrition through marketing."

This program, according to a recent *News Letter* of the National Restaurant Association, will be concerned with research "in the fields of nutrition, food preparation, and restaurant administration" and the courses at the University of Chicago will lead to the master's degree in Business Administration. Students "will be encouraged to take additional work in the fields of institution management and home economics, over and above the 7 selected courses." It is stated that "for most of these students, a program of 11 months' full-time campus work will clear the requirements for the degree."

Rationing and the Physician. The *Journal* of the American Medical Association for January 8 cites a report in the New York *Times* regarding a recommendation of the Milk Industry Advisory Committee that WFA withdraw the right of physicians to prescribe heavy cream for patients because of alleged abuses of the privilege. The *Times* reported one instance in which a physician had prescribed heavy whipping cream for 17 persons in his own family.

Juvenile Delinquency. The Children's Bureau, U. S. Department of Labor, has published a booklet, "Controlling Juvenile Delinquency: A Community Program," which is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, at 10 cents a copy.

Marie Casteen Opens Office as Food and Nutrition Consultant. Miss Casteen, formerly treasurer of the American Dietetic Association, and recently supervisor of Food Production Departments and director of Food Research Department, Hotels Statler Company, New York City, announces a new venture as Food and Nutrition Consultant, 1134 West Palm Lane, Phoenix, Arizona. Previous to her connection with the Hotels Statler Company, Miss Casteen, who holds a B.S. degree in Foods and Cookery and an M.S. in Institution Management, Teachers College, Columbia University, was technical consultant on industrial feeding problems in war plants, National Research Council, Washington; food production manager of Colonnade Lunch Company Cafeteria, Cleveland; and head of Foods and Cookery Department, State University of New Jersey.

Owing to the wide diversity of her training and experience Miss Casteen can offer consultant services in three important fields: Industrial feeding, including menu planning for three shifts and between-meal snacks using nutritious foods, tested recipes for stretching ration points and making use of available foods, and educational programs for improving the nutrition and health of war workers and their families. For restaurants and hotels she offers menu planning and tested recipes which feature low-cost foods, a minimum number of ration points and minimum labor, and at the same time are nutritionally well-balanced, attractive, and inexpensive. Her miscellaneous services include home wartime menu planning including tested recipes using available foods and few ration points, articles for trade, professional, and women's magazines, and recipe booklets for promotional purposes.

Further information regarding Miss Casteen's services may be obtained by writing to her at the above address.

Columbia-Presbyterian Medical Center, Department of Nutrition News Letter. In line with past custom a letter went out during the holidays to present and former staff members and students. Of general interest is the statement that 13 Dietitian's Aides were graduated from the first course given in Presbyterian Hospital and that "5 of these came in on Thanksgiving Day and helped during the luncheon period." Another class was to follow immediately. The letter included several pages of information on the whereabouts and present activities of former students and staff members, many of whom are in the armed forces.

Russell Chittenden Dies. Dr. Chittenden, early exponent of the low-protein intake, and emeritus director of the Sheffield Scientific School, Yale University, died on December 26 at the age of 87. Dr. Chittenden is said to have been the first investigator to have isolated a free amino acid in living tissue.

Recent Articles on Nutrition by Members of the A.D.A. Among those noted are: Mrs. Anna de Planter Bowes, "The School Lunch and Nutrition Teaching," published in *Pennsylvania's Health* by the State Department of Health, Harrisburg, October 1943; Helen E. Walsh, "The National Nutrition Program," in *Hoosier Health Herald*, Indianapolis, December 1943; and papers by Bertha S. Burke *et al.* on nutrition in pregnancy, in the November *Journal of Pediatrics* and the December *Journal of Nutrition*. Mrs. Burke writes that single reprints of these two papers are available free from the Department of Child Hygiene, Harvard School of Public Health, 55 Shattuck Street, Boston 15.

Meeting of New York Diabetes Association, Inc. A meeting open to the public was held February 19 at the New York Academy of Medicine with the following program: "Normal Standards in the Treatment of Young Diabetics," Dr. Joseph H. Barach, Pittsburgh; "Report on the Philadelphia Diabetes Survey," Dr. Joseph T. Beardwood, Jr., Philadelphia; and a round-table discussion on diabetes which included the following participants: Drs. Cecil Striker, Cincinnati; Seale Harris, Birmingham; J. West Mitchell, Pittsburgh; Elliott P. Joslin and Howard F. Root, Boston; and Edward S. Dillon, Philadelphia. Dr. George E. Anderson, chairman, Committee on Internal Medicine, presided.

Hawaii Dietetic Association. At the October meeting in the Home Economics Building, University of Hawaii, members of the Diet Therapy Section served a luncheon composed mainly of dehydrated foods. After the luncheon Marian Weaver discussed the cooking and use of dehydrated foods.

At a luncheon meeting in November at St. Francis Hospital the meal was prepared and served by student nurses in the foods and nutrition class under the supervision of Francis Janda. Mr. Newton R. Holcolm, director of the regional War Manpower Commission, spoke on "Labor Problems in Institutions." In December the members of the association were luncheon guests of the Commanding Officer, Tripler General Hospital, and also visited several mess halls and viewed the victory garden exhibit at McKinley High School.

At the January meeting at the OCD Canteen, Kashumanu School, Dr. Samuel Wishik discussed the correlation of nutrition and maternal health.

Work on the compilation of a diet manual has been started by the association as well as the collecting of quantity recipes.

Kentucky Dietetic Association. The executive committee has authorized an annual 2-day convention March 24–25 at the Phoenix Hotel, Lexington. Florence A. Imlay was appointed program chairman for the meeting.

Kentucky has five active local dietetic groups and each reports one or more fall dinner meetings at which attendance varied from 10 to 40.

Several of the hospitals in Louisville are planning to use the services of Red Cross Dietitian's Aides as soon as training has been completed.

Maryland Dietetic Association. Sue Sadow addressed the association in December on her work in New York City as a nutritionist.

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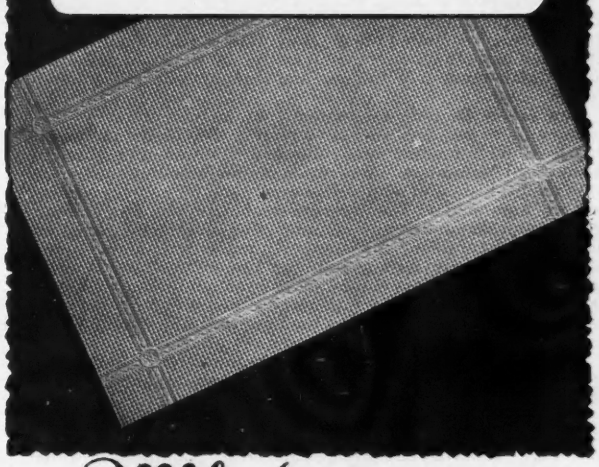

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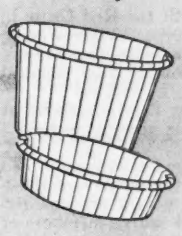

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Alice Jané has been attending orientation classes of the Woman's Joint Congressional Committee in Washington.

Grace Levis, on duty with General Hospital 118 in Australia, has been promoted to the rank of first lieutenant. Second Lt. Hermien Myers' address is now General Hospital 118, A.P.O. 927, c/o Postmaster, San Francisco. Second Lt. Frances Kelton is stationed at Fort Douglas, Utah.

Hope Hotchkiss has been appointed to the staff of the University Hospital. Helen Ballard, Miami University, has enrolled in the student course of University Hospital.

New students at Johns Hopkins Hospital are: Jean Parsons, Kansas State College; June Nelson, Colorado State College; Mary Johnson, San José State College; Doris Howes, Ohio State University; Georgiean Geanopulos, University of Delaware; Mary Delaney, Oklahoma A. & M. College; and Jeanne Bowdish, Iowa State College.

New Jersey Dietetic Association. At an executive meeting, January 25, it was decided not to reprint the Constitution until changes could be made later to coincide with revisions proposed by the national Association. The regular annual meeting is to be held in November instead of April. However, plans for a spring meeting in April were made. The program committee was instructed to procure a speaker and section chairmen were asked to make reports on the progress of their committees. In order to stimulate interest among the younger members it was decided to hold monthly "get-together" meetings consisting of panel and round-table discussions and purely social gatherings. Members were urged to support the Hobby Show held by the League of Nursing Education at the Presbyterian Hospital, Newark, February 10–11.

Selma Silverman and Dorothy Becker, formerly of Beth Israel Hospital, have opened a Dietitians' Consultation Bureau in Newark.

Greater New York Dietetic Association. The program of the meeting held at Presbyterian Hospital January 10 included the following: "Diets in Celiac Disease and Other Conditions in Which There is Fat and Carbohydrate Intolerance," Dr. Dorothy Anderson; "Nutrition in China During the War," Dr. Annie Scott, Babies Hospital, Columbia-Presbyterian Medical Center; and "Wartime Food Conditions in England," Annette Snapper.

North Carolina Dietetic Association. The current association *Bulletin* states that mimeographed copies of "Wartime Recipes" compiled by North Carolina dietitians may be secured for 50 cents per set by writing to Margaret Baker, Charlotte Memorial Hospital. The next issue of the *Bulletin* will be a "Wartime Problems" number.

According to the reports of undergraduate and postgraduate training courses at North Carolina Baptist, Charlotte Memorial, Watts, and Duke University Hospitals, Salem College, and Woman's College of the University of North Carolina, members of the state association are doing their part to relieve the present serious shortage of dietitians by training others to fill the ranks.

Salome Wells, director of dietetics at North Carolina Baptist Hospital, taught the first class for Dietitian's Aides in the state and 14 of the graduates are now serving in various capacities in that hospital.

Ohio Dietetic Association. The annual meeting will be at the Hotel Netherland Plaza, Cincinnati, April 28–29. Minerva Harbage, White Cross Hospital, Columbus, is program chairman.

Toledo Dietetic Association, with a membership of 32, is conducting refresher courses in nutrition for the lay public and cooperating with the Red Cross in other nutrition projects. Professional education was the topic of discussion at the January meeting and at the February meeting Mary Essig reported on the nutrition program conducted by the Toledo Gas Company. Fern Reamer, nutritionist, District Nursing Association, was the speaker at the March meeting. Anna Haviland, Robinwood Hospital, will discuss "Newer Trends in Dietetics" at the April meeting and Margaret Slater, a policewoman, will talk on "The Juvenile Problem," in May.

Miami Valley Hospital has cooperated with the Red Cross in training 5 members of the Dietitian's Aide Corps. These women have contributed 124 hours of service. Three more classes have been started, and a second group of 5 is receiving final hospital training.

The Dietitian's Aide program has also been very successful at Good Samaritan Hospital, Dayton, which has already trained 3 groups.

The 1944 meetings of the Canton Dietetic Association are to consist of round-table discussions, following the pattern of those held at the Pittsburgh meeting. The use of volunteers was discussed at the January meeting. There are 18 active members of the association, exclusive of the many who have entered the armed services.

Columbus Dietetic Association has a membership of 40 with 10 students at the Ohio State University Hospital. Of the 1943 student group, 5 are now Army lieutenants. An Army procurement meeting was held in January with over 300 attending. The association is particularly interested in community education and plans to distribute among high school students a pamphlet publicizing the work of dietitians to encourage interest in the field of dietetics. Pictures of dietitians working at their various tasks will be incorporated in the pamphlet. Projects undertaken by the student group of the association include teaching nutrition to patients and personnel in hospitals for the tubercular, studying the blood sugar curve of diabetic patients receiving the new globin insulin, and assisting in a project to set up a cost accounting system for a new pay cafeteria at Ohio State University Hospital.

The Ohio State University course for student dietitians now offers the master's degree with one additional quarter of residence. Six of the first class of 10 have received their master's degrees as well as certificates of student training.

Cincinnati Dietetic Association had as speaker for the February meeting Dr. Clarence A. Mills, University of Cincinnati, who discussed "Climate and Weather Influences on Dietary Needs." Anna dePlanter Bowes will speak on nutrition education at the March meeting.

Jessie Fischer, former member of the Canton association, was married in December to Private Riley Johnson, Marshall, Missouri.

Avonella Brennaman, director of Norwood lunchrooms, has been accepted by the Army and is stationed at Fort Leonard Wood, Missouri.

Recent civilian appointments include the following: Miss Qualheim, Children's Hospital, formerly in charge of milk laboratory, replaces Lillian Rees, of the same hospital, who is now at Norwood lunchrooms; Mrs. Max Hendryx, student graduate of Christ Hospital training course, to Children's Hospital; Mary McKelvey, University of Michigan Hospitals, to Christ Hospital, Cincinnati, as head dietitian, with staff members Doris Mauntler, Mrs. Emil Vallager, Mrs. Harold Gilbert and Dorotha Symons; Henriette Pribnow to Miami Valley Hospital as department director, replacing Mary Ruth Curfman; Mrs. A. F. Millonig, Women's Hospital, Cleveland, to Good Samaritan Hospital, Dayton; Olive Walker, University Hospitals, Cleveland, to Dayton Red Cross staff; Ruth Senteff, Walnut Hills school lunchroom, to teaching staffs of Mercy, Hamilton and Bethesda Hospitals, Cincinnati.

Miami Valley Hospital, Dayton, has 14 students in the dietitian training course, in addition to 4 who will complete training in Army training centers. Mary Anne Caramelia and Marjorie Johnson, 1943 student graduates, are now members of the hospital dietary staff.

Verna Miller, director of the Home Economics Department, Frigidaire Corp., Dayton, reports that two new booklets, "Home Freezing" and "Wartime Suggestions for Use and Care of Household Refrigerators," are available upon application.

Philadelphia Dietetic Association. The program of the February 8 meeting at Mt. Sinai Hospital consisted of a workshop on teaching nurses covering "Objective Methods of Teaching and Evaluation," with the following taking part in the discussion: Elizabeth Miller, Philadelphia General Hospital; Lillian Myers, West Jersey Homeopathic Hospital; Florence Lehman, Temple University; and Amanda Ebersole, Drexel Institute of Technology.

The OPA has been working in close cooperation with the local dietetic association and has made available to the members a monthly bulletin of ceiling prices which has proved to be a valuable guide in efficient purchasing.

Utah Dietetic Association. Sixteen attended the January meeting at Latter-Day Saints Hospital when Lt. Dorothy Marden, Bushnell General Hospital, spoke on special diets developed for use with penicillin therapy for gunshot wounds.

Margaret Doidge Knudson (Mrs. Goldburn L.), 444 South 4th Street, Salt Lake City, past president of the association, died January 4 of complications resulting from childbirth. She received her degree from the University of Utah in 1937, and her student training at Latter-Day Saints Hospital in 1938, where she had been employed at the time of her death.

Recent appointments include: Dorothy Marden as chief dietitian, Bushnell General Hospital, succeeding Lt. Merlene Tew Colaruso; Frances Kelton as staff dietitian, Bushnell General Hospital; Madonna Herbert to Dee Hospital, Ogden; Wanda Mathews, formerly of Dee Hospital, to Veterans Hospital, Salt Lake City; and Amy Cardon to Utah Valley Hospital, Provo.

News From Our Advertisers and Exhibitors. Edwin T. Gibson, vice-president of *General Foods Corporation*, 250 Park Avenue, New York, has announced the formation of a new operating unit within the organization to be known as the Birds Eye-Snider Division of General Foods, and comprised of Frosted Foods Sales Corporation, Q-F Wholesalers, Inc., the recently acquired Snider and Ray-Maling Divisions, and B. E. Maling, Inc., a subsidiary. "Creation of the new organization lays the groundwork for realization of the enlarged potential the postwar period will offer. The units of the division have a common interest in the types of food

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they process and in their distribution. Production possibilities, both in volume and variety, are thereby increased," according to Mr. Gibson. Products of the division will include Birds Eye fruits, vegetables, poultry, sea foods, and specialties; condiments and canned fruits, vegetables, tomato juice and vegetable juices, and other products under the brand names "Snider," "Lily of the Valley," "Burt Olney," "Flag," "Holiday," "Fort," "Mistletoe," and "Ray-Maling." This company, as exhibitors at the Pittsburgh meeting, distributed among other literature the following items which may still be obtained upon application: a booklet on cereals, suggesting these as the main course in luncheon and supper menus, and indicating the many ways in which they can be served; a folder illustrating the use of "D-Zerta" in puddings, Bavarian creams, and salads; a food chart presenting the nutritive and energy value in one average serving of many common foods, including milk, cereals, various meats, vegetables, fruits, nuts and sugars; a set of card index recipes for quick breads, biscuits, cakes, cookies, frostings, pies, and puddings; and a menu planning aid entitled "The Master Menu Planner," which suggests food variety that will ensure maximum choice from a minimum number of dishes and at the same time provide the protective foods recommended by the Nutrition Committee of ODHWS. There are two master menu plans, one for dinner and one for luncheon, offering suggestions for first course, entrée, vegetables, salads, desserts, and beverages, for service restaurants, lunch counters, and cafeterias.

Mead Johnson & Co., Evansville, Indiana, writes as follows regarding cod liver oil: "Some authorities recommend that cod liver oil be given in the morning and at bedtime when the stomach is empty, while others prefer to give it after meals in order not to retard gastric secretion. If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any 'taste' is largely a metallic one from the silver or silver-plated spoon, a glass spoon has an advantage. On account of its higher potency in vitamins A and D, Mead's cod liver oil fortified with percomorph liver oil may be given in about one-fourth the dosage of ordinary cod liver oil, and is particularly desirable in cases of fat intolerance."

"Food and Nutrition Ideas" is the title of Bulletin 17 prepared by Modane Marchbanks, home economics director, for distribution by the *National Peanut Council, Inc.*, C and S Bank Bldg., Atlanta. At the request of the government the peanut crop has been greatly expanded, the production in 1943 having totalled 2½ billion pounds, 16% over 1942. Suggestions for serving and recipes are included in the bulletin.

An order blank which provides space for recording point values as well as prices has been prepared by the *Chicago Dietetic Supply House*, Chicago 12. The list covers breakfast foods, fruits and fruit juices, muffin flours, vegetables, salad dressings and oils, flavorings, and desserts. Insulin products, accessory equipment, and related literature are included in a recent issue of *Cellu Topics* which also offers various new recipes and "ration point savers."

The *Cream of Wheat Corporation*, Minneapolis, has compiled a leaflet entitled "Stretch Your Meat With Cream of Wheat," with suggestions for using this product in such well-known dishes as Salisbury steak, meat loaf, scrapple, and spoon bread.

A new set of the popular 4 x 6 in. card index quantity recipes has been prepared for distribution by the *Ralston Purina Company*, St. Louis 2. Created and tested by home economists, these recipes are suggested as a means of obtaining the best possible use of ration points and the more readily available foods. The group includes recipes for extending meat, for meat alternate dishes, and for several unusual desserts.

A timely folder entitled "Modern Ways to Cook Pork" has been compiled by the *National Live Stock and Meat Board*, Chicago. Roasting, broiling, panbroiling, braising and cooking in water are the methods described. Appetizing ways of serving this staple product are suggested. A recent issue of *Food and Nutrition News*, published by this company, contains articles on meat in the Army diet and an especially pertinent discussion on the conservation of fat.

Knox Gelatine, Johnstown, New York, offers to dietitians a generous supply of special dietary and recipe material, including booklets on the use of Knox gelatine in the feeding of infants, in the treatment of peptic ulcer, in diabetes, in feeding the sick and convalescent, and in digestive disorders. Booklets of attractive dessert recipes, suggestions for reducing diets, and for wartime economies are also available upon application.

The January *Review of Nutrition Research*, published by the *Borden Company*, 350 Madison Avenue, New York, presents another in their series of monographs, "Trace Elements in Nutrition. 11. Manganese," and pertinent paragraphs on vitamins in germinating seeds, calcium and longevity, thiamin and learning, and iodinated casein and milk production. Biolac, the modified evaporated milk manufactured by the *Borden Company*, will be further concentrated in a new 13-oz. container which will effect savings in metal, labels and storage space. One ounce of this new product diluted with 1½ oz. water gives the correct mixture.

Maltex Company, Burlington, Vermont, offers a new booklet of recipes for serving 100. The recipes, in all of which cereal is incorporated, include muffins, raisin bread, coffee cake, waffles, griddle cakes, meat loaf, and puddings.

Nutrition Research a publication of the *California Fruit Growers Exchange*, Los Angeles 55, presents, among other features, a summary of an address entitled "Some Obstacles in the Path Toward an Optimum Diet," by Dr. A. J. Carlson, University of Wisconsin, and an interesting article on Red Cross food packages to war prisoners.

A revised edition of the booklet "Feeding A Family at Low Cost" has been published by the *Evaporated Milk Association*, 307 North Michigan Avenue, Chicago 1. This includes an outline of essential foods for a family; minimum daily requirements of meat, fish, poultry, eggs, cheese, legumes, vegetables and fruits, cereals, fats, sweets; suggested food order for a low-cost adequate diet for one week, and weekly menus. A new feature is an interpretation of the government's "Basic 7" food chart.

In addition to those mentioned under Nutrition Program Materials in this section of the February JOURNAL, the following publications are also available from the *Evaporated Milk Association*: "School Lunches" and "Planning Foods for the School Child"; "Quantity Recipes for Quality Foods"; "Quantity Recipes for Canteen and Mass Feeding"; and "The Lunch Box." A complete list of available publications and reprints may be obtained by writing to the Association at the above address.

A 16 mm. full-color sound motion picture, "The Danger Point," has been produced for the Public Health Committee of the *Paper Cup and Container Institute*, 1790 Broadway, New York 19. The picture is described as a "simple, neighborly account of the health department's role as the guardian of community health." It is available for purchase at cost or will be loaned free for single showings on payment of carrying charges. A new illustrated booklet, "Paper Cups—Essential in War" has been published by the institute.

Scientific tests being conducted by the *Westinghouse Electric & Manufacturing Company*, Mansfield, Ohio, to develop an improved automatic laundering machine, include the burning of cloth to determine if a test washer is doing a good job of rinsing. A clean piece of cloth, 4 x 4 in., is burned at 1500°F. in a small electric furnace. Then the ashes are weighed in an analytical balance so precise that it can weigh a speck of dust. Next, another piece of cloth is washed, rinsed and dried in a test washer. This piece is also burned and its ashes weighed. The difference in the weights of the ashes shows how much soap the washing machine rinsed out. To determine whether a test washer is removing dirt efficiently, a piece of cloth is placed in a reflectometer, an instrument consisting of a special light bulb, mirrors and a meter, and the reflectivity determined. Then the cloth is dirtied in a mixture of oil, carbon, and tallow. After being washed in a newly developed washing machine, the cloth again gets a reflectivity test. To be satisfactory, the test machine must do such a thorough job of washing that the reflectivity variance is hardly perceptible.

"Cracker Chatter" published by *National Biscuit Company*, 449 West 14th St., New York City, includes attractive recipes for luncheon and party specials for the homemaker, tempting desserts, and quantity recipes for sweet potato pie and wheatsworth biscuits.

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